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1S5	10/-			12AH7	5/-	5 a £1	
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3BP1	35/-			14A7	3/6	7 a £1	
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5V4G	15/-			1629	5/-	5 a £1	
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5Z3	17/6			35T	30/-		
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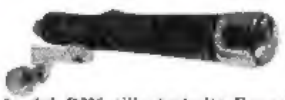

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before the 8th of the month preceding publication. Technical articles should preferably be typed, double spaced, on one side of the paper, signed and numbered. All drawings should be large and done in Indian ink.

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VK2WI: Sundays, 1100 hours EST, simultaneously on 3573 Kc., 7146 Kc., 50.16 Mc. and 146.13 Mc.; Intrastate call-backs taken on 7050 Kc. VHF 1930 hours EST on 50.16 Mc. and 146.13 Mc.; call-backs taken on 2 metres.

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★

OUR COVER

An engineer is shown testing a versatile two-channel tape recorder exhibited at the recent International Audio Festival and Fair in London. This new professional transportable recorder is equally suitable for recording chamber music as the roaring blast of a jet aero engine. (Photo by courtesy of the United Kingdom Information Service in Australia.)

FEDERAL COMMENT

★

I.T.U. PLANNING

As another year draws towards its close, we come nearer to the next I.T.U. Conference. Although a definite date has not yet been set for its time or venue, present indications are that it will probably be held some time in 1965. Irrespective of when it would commence, some discussion took place at the recent Federal Convention in Perth as to the Institute's preparedness for this event and what Federal Council action was to be taken.

It is obvious to every Amateur who stops to think about it that Amateur frequencies will again be under fire from other Services and will probably be harder pressed than in 1959. We came out of the last battle reasonably well when everything is considered, but we can ill afford to be complacent about our status in Australia or the support of our American contemporaries. We must be prepared to fight our own battles. We can only do this effectively if we again send a representative to Geneva or wherever the Conference is to be held.

No one will deny that we may have fared a lot worse if the late John Moyle had not been present in Geneva to represent the Institute and carry our battle into the front line. His personal diplomacy, discussions behind the scenes with other representatives, lobbying where necessary and particular knowledge of all the problems involved were contributing factors in the Australian Amateur's rise in status with the authorities and the at least partially successful prosecution of our aims.

It is therefore equally true that we must be represented once more, and to this end, planning is already in hand to determine the best and most effective way of again raising sufficient funds to send another representative. Who this representative may be is a matter for the future but you may rest assured that we will again have the best man that is available at the time. This is, however, not our main concern at this juncture—we must first raise sufficient funds to enable us to send one.

Premature action in any fund-raising scheme of this nature can easily kill it if it is not properly organised, although donations at any time for this purpose would always be welcomed. But until this has been fully discussed by Federal Council and a policy determined, individual organising attempts may be largely wasted. We know from past experience that when the case is put fairly and squarely before the average member and non-member, he will rise to the occasion as he did before, and give his wholehearted support to the financing of the representative to protect his interests and hobby. At the appropriate time, the "green light" will mark the opening of a nation-wide appeal.

—FEDERAL EXECUTIVE, W.I.A.

CONTENTS

MATTERS—MOBILE

PART TWO

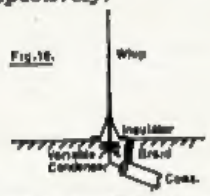
K. WOODWARD,* VK2ZAU

MOBILE AERIALS

V.H.F. AERIALS

If the previous sections have not caused fires of wrath to descend upon the author's head, this should finish the job. Firstly, we will tackle the problem of v.h.f. aerials. The simplest mobile aerial is a quarter wave whip (not on 7 Mc. please) and a short discussion on achieving the best results from these will not be out of place.

The impedance of a ground-plane aerial will give good matching when fed with 39 ohm coaxial cable. This cable is commercially available, but should your Scots blood prevail, use two lengths of 72 ohm coax. in parallel. The approximate lengths for a quarter wave whip on 50 and 14 Mc. are 55 and 19 inches respectively.



Now should you wish to use 52 or 72 ohm coax. to feed your whip, you can do so and achieve very close matching with the following method. As illustrated in Fig. 18 a variable capacitor is placed in series with the inner conductor feed to the whip, but the length of the whip must be altered. The approximate lengths would be—**50 Mc.**: 52 ohm coax., 66½"; 72 ohm coax., 73½". **144 Mc.**: 52 ohm coax., 23½"; 72 ohm coax., 25½". The whip should be adjustable in length and varied as well as the variable capacitor to give maximum radiated field strength. This is, of course, where your field strength meter will be invaluable.

When testing a ground plane aerial use a vertical whip on the field strength meter, and when testing beams (horizontal) use a horizontal dipole. When you make an adjustment to your aerial do not forget to re-peak your transmitter output, watching the field strength meter for maximum output.

For field days you will want to make provision for v.h.f. beams and Fig. 19 illustrates the one used by the author with considerable success. This beam converts from 2 metres to 6 metres for stationary operation, but the 2 metre section has travelled at 50 m.p.h. on country roads. The original beam has snap-in type elements, but there is no reason why extension pieces could not be engineered for the radiator and D2 of the 2 metre beam.

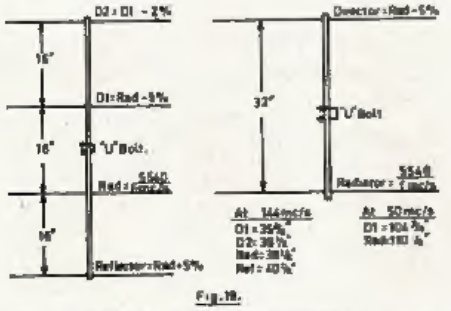


Fig.19.

A folded dipole as the radiator would give a good match to 72 ohm coax. feeder, but the author prefers the original method of matching with a quarter wave stub. This stub, illustrated in Fig. 20, is made of 39 ohm coax., the lengths being—**50 Mc.**, approx. 39"; and **144 Mc.**, approx. 13½". In practice, except for the most stringent conditions, the 50 Mc. stub is left on permanently as it does give a fair match on 144 Mc.

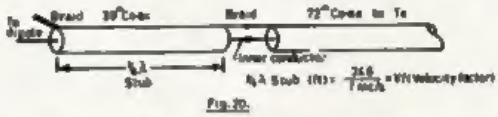


Fig.20.

The velocity factor for coaxial cable can be taken as 0.66 when calculating the quarter wave stub. The four element beam on two metres will give an approximate power gain of eight times and if designed for 50 (with the 0.2 wavelength spacing) would make an excellent home station beam. The two element beam on 50 Mc. gives an approximate power gain of three times.

In v.h.f. mobile aerials, one which has no gain but permits fairly circular horizontal coverage is the turnstile. This aerial illustrated in Fig. 21 is simple to make and to match, and will give better results than a quarter wave whip when working horizontally polarised home stations. Incidentally, at least one Sydney home station has been using a similar aerial on 2 metres with very good results. The two distances X are not important as long as they are of equal length. The correct phasing being achieved by the extra quarter wavelength on one set of dipoles. This quarter wavelength should be calculated as for a quarter wave stub and would be approximately 13½" at 144.5 Mc. The feeder cable could be two parallel lengths of 72 coaxial cable.

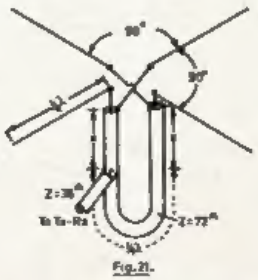


Fig.21.

To finish the discussion of v.h.f. aerials, it must be pointed out that the most efficient position for a whip is in the middle of the roof. If you do not wish to cut a hole in your roof, it may be possible to fix a metallic base plate to your whip and fasten it to the roof with rubber suckers. Remember that if you mount the whip on your mudguards endeavour, wherever possible, not to get your car body between the whip and the station being worked.

First choice is the roof, second choice can often be the centre of the boot lid, third choice is the mudguards. If you have an external metallic sunvisor these often make a good mounting place for a v.h.f. whip. When siting your whip other than on the roof, try for a removable ornament or drill your holes so they can be used for a normal car aerial or side-vision mirror, etc., when the car is to be sold.

7 Mc. AERIALS

A book could be written on this topic alone as there are so many approaches to the manufacture of an efficient 7 Mc. mobile aerial. Firstly, the spiral whip, secondly the base-loaded whip, and thirdly the centre-loaded whip. We will deal only with the centre-loaded whip. The most important factor in this aerial is the loading coil. It should have the highest possible Q with smallest dimensions, thus reducing to a minimum air-resistance.

We will assume a whip of 8 feet, 3 feet at the base and 5 feet above the loading coil. The loading coil suggested for 40 metres is approximately 32 microhenries, wound as follows: 30 turns of 14 gauge enamelled wire, 2½" in diameter, approximately 5" long. This coil should ideally be air-wound, rib supported. However, should this be impossible, the best insulator possible should be used, polystyrene, etc., remembering any loss in this coil makes a very big loss in radiation efficiency.

With the aerial installed and the transmitter operating, the top section of the whip should be adjusted to give maximum radiated signal. If the coil has been wound correctly, this need not be touched, however in no circumstances whatever leave a shorted turn on the coil or introduce any unnecessary metallic objects. Remember after each adjustment to the whip, to re-peak your transmitter before noting the exact radiated field strength.

The approximate radiation resistance of this whip, depending on installation, will be 10 ohms, so you will readily appreciate that there will be a mismatch with any coaxial feeder used. This can be overcome by placing a capacitor from the base of the whip to ground. It may be necessary to add a turn or two to the centre loading coil, but the necessary adjustment can usually be made by the top section of the whip.

The size of the condenser depends on the impedance of the coaxial cable and the impedance of the aerial, the formula for determining this being as follows:—

$$C = \frac{2 \times \pi \times f_{Mc} \times R_c \sqrt{R_a \div (R_c - R_a)}}{10^6}$$

where R_a = impedance of aerial.
R_c = impedance of feeder.

Assuming an aerial impedance of 10 ohms and a feeder of 50 ohms at 7 Mc., the condenser value would be 1,099 pF.

* Flat 28, Block 3, Curtis Place Flats, Moorehead Street, Redfern, N.S.W.

Portion of the calculated capacitor should be made variable to allow final adjustment. Adjust the top portion of the whip to re-resonate the aerial for maximum field strength, then adjust the base capacitor and transmitter tuning for best results. Repeat all adjustments several times. The final capacity may be made up with ordinary receiver-type mica condensers.

Having spent the time to make up this aerial and tune it correctly, should reward you with many pleasant QSOs. Remember that this aerial has a high Q and should be resonated on your favourite operating frequency. If your transmitter is v.f.o. controlled, you can check the exact resonance point of your aerial and operate within ±30 Kc. of this point for best results.

MOBILE POWER SUPPLIES AND MISCELLANEOUS

This is the last of this series of mobile equipment and we will discuss briefly the fundamental basis of all mobile operation, the power supply.

While good results may be obtained with the humble vibrator power supply, we will look into the use of transistor power supplies and adaption to genemotors for mobile operation.

TRANSISTOR P.S.

I do not intend to give a circuit for a transistor power supply as an excellent one has been featured by Mullard and details, if not at hand, can be obtained from that company at no obligation. Moreover, the transformer for this power supply, the thing which most people like myself are too lazy to manufacture, may be purchased from an Australian manufacturer (an advertiser in "A.R.") for a reasonable sum. Also you may purchase a complete power supply from two or three sources which give satisfactory results. Whatever your approach, it is handy if possible to obtain a tapped power supply of at least one high and one medium output voltage. It is possible to run your power supply on receive at low h.t. voltage with much lower primary current drain than when transmitting at high h.t. voltage.

Never abuse your transistor power supply. Mount it so that it receives, if possible, a good flow of air current. If not possible at least make sure it is not subjected to a great deal of heat from external sources. Make sure that you connect the correct polarity to the supply and if purchasing same ask for the facility, and the instructions how to, of changing the polarity input—remember you may sell your car some day.

If the power supply is not fused make sure you insert the correct size fuse in the l.t. lead. Normally a transistor power supply fails safe if incorrectly treated, but do not rely on this feature; you may be unlucky and power transistors are not cheap. Although not so critical as vibrators to car voltage, take care that your regulator system is working correctly and the charging voltage is not exceeding approximately 14 volts.

In manufacturing any type of power supply I do recommend the use of silicon rectifiers, OA210s, etc. Most power supplies these days use voltage doubler circuits, thus saving a little space and weight as far as the transformer is concerned, especially if you are hand-winding same! Illustrated in Fig. 22 is the output filtering and voltage doubling circuit as used in a commercial power supply. The electrolytic condensers are dual types. The reason for the simple filtering is, of course, that the supply is working at audio frequencies, not 50 c.p.s. Should the same voltage doubling circuit be used with a vibrator supply, it may be necessary to replace the first 27 ohm resistor with a choke to obtain efficient filtering.

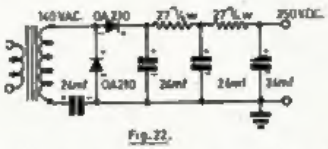


Fig. 22.

The big advantage of the transistor power supply other than conversion efficiency is the absence of radio noise at short wave frequencies as compared with the genemotor and vibrator power supplies. However, do not be surprised if you try to listen to your portable wireless in the car if you get several birdies on the broadcast band from the transistor power supply.

MODIFICATIONS TO I.F.F. GENEMOTOR

The following adaption for a genemotor supply was extracted from VK-2ZVL by gentle persuasion too horrible to record in this magazine. VK2ZVL has been using this idea for some years very successfully on the v.h.f. frequencies. Nearly everyone is familiar with the I.F.F. style genemotor designed for operation of 18 volts but which functions quite well on 12 volts. However, the output voltage of 250 or less, depending on loading, does leave something to be desired. Fortunately this can now be remedied with a little work on the input side of the genemotor.

As can be seen in Fig. 23 a third brush holder (insulated) has been fitted to the l.t. input of the genemotor. No wiring changes are to be made. It is simply necessary to ground the original terminal for reception and change this ground over to the new brush holder terminal during transmission periods. The third brush position should be adjusted for best output voltage before fastening securely to the genemotor frame.

I stress that the third brush be used for intermittent transmitter use only, as

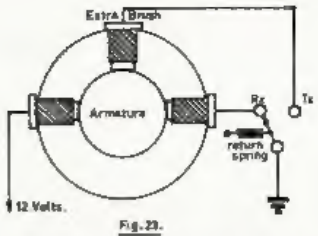


Fig. 23.

depending on the position of the third brush the genemotor could be run to destruction in approximately one hour continuous running on the third brush due to overheating. This method, however, is OK for normal mobile transmission periods excluding the fox on fox hunts.

FOX-HUNTING AERIAL

Having mentioned the subject of fox hunts, brings us to the first topic in the miscellaneous items, the fox-hunting aerial for 2 metres.

Fox-hunting beams are constructed for maximum back-to-front ratio and whilst most beams used seem to consist of three elements with 0.1 director spacing and 0.15 reflector spacing, the author is not fully in agreement with this system. I prefer a three element beam with 0.1 director spacing and 0.25 reflector spacing, however the element lengths are not cut to standard length as for maximum gain.

The director should be approximately 10% shorter than the radiator and the reflector approximately 7½% greater than the radiator. A sample beam cut for 144.5 Mc. would then be as follows: Director 34¾", radiator 38½", reflector 41½"; director spacing 8" and reflector spacing 20". The result looks horribly unbalanced but performs well. A very rough match can be made to coaxial cable with a folded dipole radiator and seems good enough for the purpose of fox-hunting.

In chasing hidden transmitters you must be able to turn your receiver gain right down, preferably at the front-end otherwise when you get very close to the fox you will not be able to get a reasonably true bearing. Of course a good S meter or magic eye is virtually a must. Maybe someone with a good deal of experience in this field will contribute an article on how to beat the experts.

I understand an excellent article on mobile switching, road safety, aerial efficiency, and layout of mobiles is shortly forthcoming, so we will leave these subjects to our fellow author. ●

MODIFICATIONS TO MODULATOR DESIGN WITH OC26 TRANSISTORS*

It has been found that under unfavourable circumstances — particularly under sustained drive—the previously described ("Mullard Outlook", Australian Edition, Vol. 3, No. 3, pages 28, 29 [also "A.R.," May '61—Editor "A.R."]) "Modulator Design with OC26 Transistors" may be thermally unstable. Leakage currents in the OC74 driver transistors and in the OC26 output transistors may be equally responsible. To guarantee thermal stability under sustained-drive conditions at ambient temperatures of up to 45°C., it is recommended that the following modifications be made:—

★

* Adjust base bias for total quiescent current of 40 mA., not including microphone current.

★

(a) A resistor of 0.4 ohms (R9 in the accompanying circuit diagram) should be included in the common emitter return of the output transistors.

(b) To minimise heating of the driver transistors under drive, 47 ohm collector load resistors (R5, R8) should be used.

(c) The return resistors for OC74-emitter-OC26-base (R6 and R7) should be decreased from 1.2K ohms to 220 ohms.

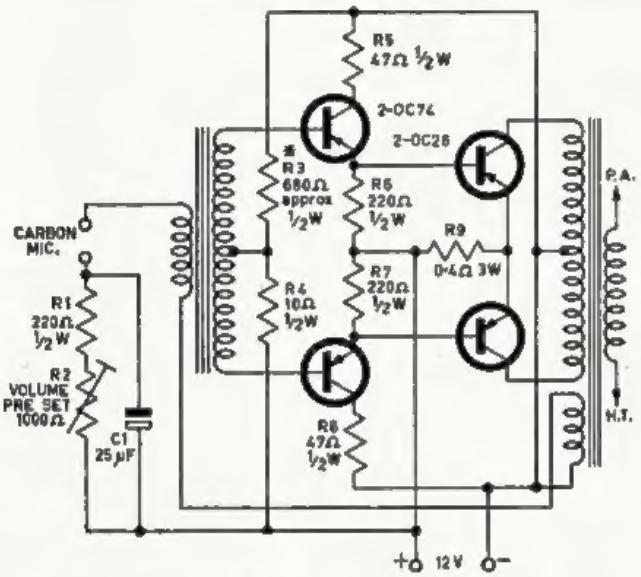
It should, in addition, be ensured that the 2-OC74 as well as the 2-OC26 have adequate heat sinks—the cooling fins being screwed on to any available flat metal surface.

The use of an emitter resistor in the output stage results in some loss of power and sensitivity, although there is an improvement in the fidelity at moderate power levels. The revised performance figures are as follows:—

Revised Performance Figures

Maximum output power, 1,000 c/s. (10% total harmonic distortion)	14.5 W.
Voltage across input terminals for maximum output power	920 mV.
Input impedance (approx.)	50 ohms
Negative feedback	9 db.

The above concludes the extract from "Mullard Outlook," Australian Edition. Below is an extract from "Info," (VK5 Division Bulletin).



Editorial Note.—Looking at the output circuit, we see that, with the original output transformer and load, the collector load on each transistor is the sum of the following.

Emitter Resistor	0.4 ohms
Load Impedance reflected on half primary, $\frac{\text{Load Resist.} + \text{Sec. Resist.}}{(\text{Turns Ratio})^2} = \frac{4225 + 190}{335 \times 4}$	3.3 ohms
Resistance of half primary ..	0.25 ohm
Making a total Resist. Load	3.95 ohms
Allowing a knee voltage of 1 volt in the OC26, i.e. a peak collector swing of 11 volts, the peak current of the OC26 equals 11 ÷ 3.95	2.8 amps.
Because of leakage inductance and iron loss the peak current induced into the secondary will be less than 2.8 ÷ 36.6	0.77 amp.
And the power into the load will be less than— $\frac{0.077 \times 0.077 \times 4225}{2}$	12.5 w.

The iron loss is estimated at 0.25w., therefore if our calculations are correct it would seem that, with two perfectly matched transistors, one expects an output of just over 12 watts, and further, that in order to obtain 15 watts of audio power into the modulated stage, it would be necessary to obtain a more efficient modulation transformer and either—

(a) Re-design the modulation transformer so that the primary impedance is 10 ohms, i.e. 52 turns per side.

(b) Reduce the impedance of the modulated stage to 3,160 ohms, or

(c) Increase the supply voltage to 13.5 volts.

We feel that taking normal variations of components into account, that the modulator would fall more happily into the 10 watt rather than the 15 watt class. We also feel that 0.9 of a volt is quite a bit too much to expect from average microphones, and a preamplifier stage would be necessary, and this, of course, entails a re-design of the input transformer. ●

☆

COMPUTER "PREVENTS" SHIP COLLISIONS

A computer designed to act as the "eyes and ears" of sea-going vessels and which may virtually eliminate ship collisions, has been developed in the United States.

Designed to tie in with a ship's standard radar system, the marine collision avoidance computer was developed by the Goodyear Aircraft Corporation, Akron, Ohio.

A Goodyear spokesman said that the computer would give audible and visual warnings of collision courses, forecasting both relative and true courses of other ships 30 minutes in advance. In addition, the equipment advises the navigator of the necessary evasive action to manoeuvre out of a potentially dangerous location.

With existing ship radar, such information could be obtained only by plotting data obtained from the radar screen on a manoeuvring board, the spokesman said. Use of the computer provides continuous and accurate information without laborious plotting, thus freeing the navigator and other officers for other important duties on the bridge.

Targets are automatically released from the trackers as they leave the 20-mile range, or may be manually released by the operator, the Goodyear spokesman added.

* Reprinted from "Mullard Outlook," Australian Edition.

DIVERSITY FOR THE AMATEUR

N. BURTON, BERS-11494*

THE Amateur Radio Service, in common with other Services using the short wave spectrum, has been, and still is, plagued with what is perhaps the most annoying of radio troubles—fading. Other Services have tackled this problem seriously, but apart from automatic gain control, which is only a partial palliative at the best, the Amateur has been notably backward in adopting any form of remedy against this nuisance.

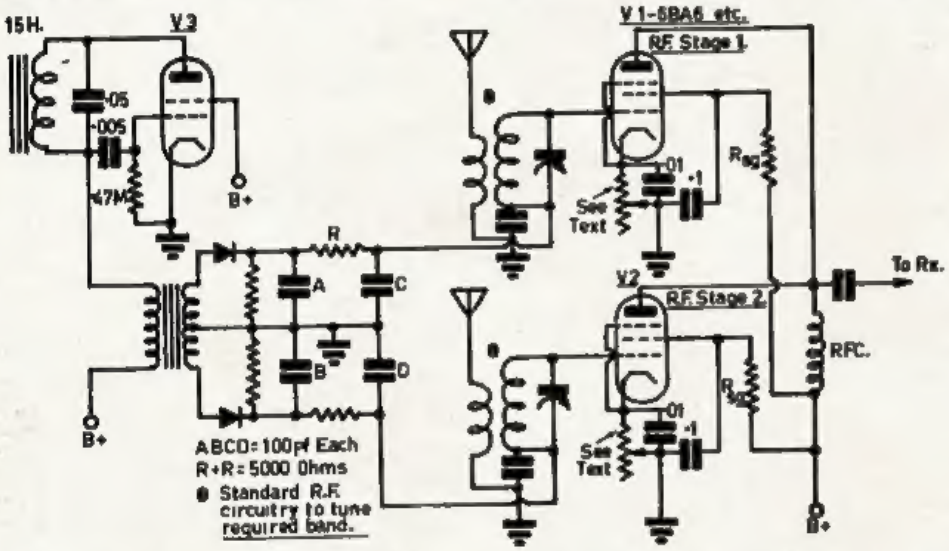
Before the last war at least one commercial firm offered a diversity receiver for Amateur use, but in spite of the modest price, around £160, few Amateurs availed themselves of the benefits this receiver could offer.

The idea of diversity, as is well known, is to utilise the better of at least two signal voltages derived from separate aerials at any one instant, since, at any one instant, the voltages produced in different aerials by the same transmitter will vary widely.

A method was offered some years ago to Amateurs utilising the receiver a.g.c. line to operate a mechanical switch, but as the switching action depended on the uncertainty of a gas triode to trigger the switch, it, if for no other reason than this, failed to gain popularity.

The position today remains the same; fading is still with us and any Amateur today wishing to purchase a diversity receiver will find that the ones available commercially are meant for point to point w.t. or r.t. working and hence are ill adapted to rapid searching of the band. Even if they were suitable for rapid searching, the cost (around £1,500) is such that most Amateurs would give a second thought to the matter before purchasing one.

What can we do about the matter then? The answer would seem to be simple and within the means of any Amateur. It is to make our own switching device, but instead of using a clumsy mechanical switch, to do the job elegantly, automatically and electronically.



The aerials may be spaced to obtain the largest voltage difference or they may be of different polarisation, which will produce the same effect, and this latter is perhaps the easiest for the Amateur, and technically for him, the best, since most short wave transmissions suffer varying degrees of rotation of polarisation in the reflections they make on their journey from the far point. It follows then that one aerial can be the normal transmitting aerial whilst the other aerial can be a simple dipole arranged vertically.

It is of course impossible to combine the outputs directly due to the phase difference, but some kind of switching from one aerial to the other allows the better signal to be used at any one instant. The switching could, of course, be done by hand when, aurally, the signal began to fall, but this method is hardly practical and is hardly in keeping with good practice.

Referring to the circuit, it will be seen that two aerials have been fed into separate r.f. amplifier valves and that these r.f. amplifiers share a common anode load and output condenser. This departs little from normal practice with the exception of the common anode load and this will explain itself as we proceed. The remaining valve is the odd man out. Close examination reveals this to be an oscillator of very low frequency—the values indicated set this frequency around 30 c.p.s. The output from this oscillator is fed via a Class B transformer into a pair of suitable small metal rectifiers at whose output, across the load resistors, appears a voltage which, after smoothing is applied, as would be a.v.c. to the grids of the two r.f. amplifiers.

The working is as follows: At any one instant one of the rectifiers applies a voltage to the grid of one of the valves and, dependent upon the cycle, this applied voltage either adds to the standing bias on the valve, so cutting it off else it subtracts from the standing bias, and so allows the valve to conduct. The reverse cycle reverses the operation of the valves and so at any one instant only one aerial is connected to the receiver, but as this changeover occurs 30 times a second, it is rapid enough to provide a much more level audio output from the receiver and renders signals far more pleasant to read and so adds enjoyment to a contact.

Concluding on a practical note, it is suggested that the oscillator be well screened; also the filter components up to the output ends of the two rectifiers, whilst arranging the bias on the r.f. valves at cut off point, or almost so, it can be ensured that the valves do cut off or conduct. As little amplification is needed from these valves, there is no objection to a high standing bias on them. ●

* 130 The River Road, Revesby, N.S.W.

NEW W.I.A. QSL BUREAU ADDRESS

Members are asked to note the new address for the Wireless Institute of Australia Federal QSL Bureau. It is also requested that VK stations, when in contact with DX stations, inform them of the new address so that the widest publicity can be given to this matter.

The following address should be used forthwith for all QSL Bureau business only:—

W.I.A. FEDERAL QSL BUREAU,
P.O. BOX 41, BOX HILL, E.11,
VICTORIA, AUSTRALIA.

FREQUENCY PREDICTION CHARTS

The Frequency Prediction Charts were discontinued due to space demands and the fact that it was considered they were of little interest. These Charts will be re-introduced as soon as suitable data is again available to "A.R."

The Publications Committee requests readers interested in these Charts to advise how they would like the data presented. Regrettably, cost prohibits their presentation in graphical form.

W.I.A. N.S.W. DIVISION
HUNTER BRANCH

ELEVENTH ANNUAL

CONVENTION

will be held on

SATURDAY, 29th SEPT.

and

SUNDAY, 30th SEPT., 1962

Full details in Sept. "A.R." and the Bulletin.

For advance bookings contact Hon. Sec., G. Sutherland, 15 Marine Vw., Newcastle.

75-WATT MODULATOR

THE modulator circuit is based on information appearing originally in R.C.A. "Ham Tips," re-printed in "Amateur Radio" (August 1948 and August 1960) and "Radiotronics" (July-August 1949) showing a method of using 807 valves as zero bias Class B Modulators. Tests have proved that this system produces the results claimed and does this without the usual complications of bias and screen voltages, etc.

Considering the popularity and low price of 807 valves, this circuit has much to commend it.

A complete modulator unit with pre-amplifier was designed, built and tested as a prototype, and all relevant tests were made including actual operation with a 100 watt transmitter. The performance of the modulator was very satisfactory, after one or two modifications were made to the original circuit in order to produce the required frequency response. The pre-amplifier provides sufficient gain for most high impedance type microphones.

• By popular request the following two articles are reprinted as the back issues of "A.R." are no longer available.

Many Amateurs are at a loss to know the best manner to obtain the audio power required to modulate their transmitters. A very good means to obtain 75 watts of audio is the use of 807s (or 1625s) in Class B zero bias.

TEST RESULTS

The frequency response was taken overall from the input of the driver valve to the secondary of the modulation transformer, terminated in a resistive load of 10,000 ohms, and with 100 mA. d.c. through the secondary winding.

At full output of 75 watts the frequency response was within 1.5 db. from 200 to 7,000 c.p.s. The distortion present at full output over the frequency range was quite low and aural tests showed that the speech quality was excellent.

The response of the pre-amplifier stages can be modified to suit a particular microphone by altering the coupling condenser values and in the case of a crystal microphone by reducing the resistor value from grid to earth on the first valve. It will be noted that the low frequency response falls off below 200 c.p.s., the transformers being designed to aid in this respect.

Reduction of the high frequency response and harmonics produced by the negative peak clipping valve is also desirable, and can be achieved by the use of a filter or to a degree by a suitable by-pass condenser.

It is well known that speech waveform is of a very peaky nature, and this means generally that either a low average modulation level must be tolerated, or some means must be provided to overcome this limitation. Without suitable precautions, an increase of the audio gain above a certain level will cause some of the higher negative voltage peaks at the modulation transformer secondary to exceed the final

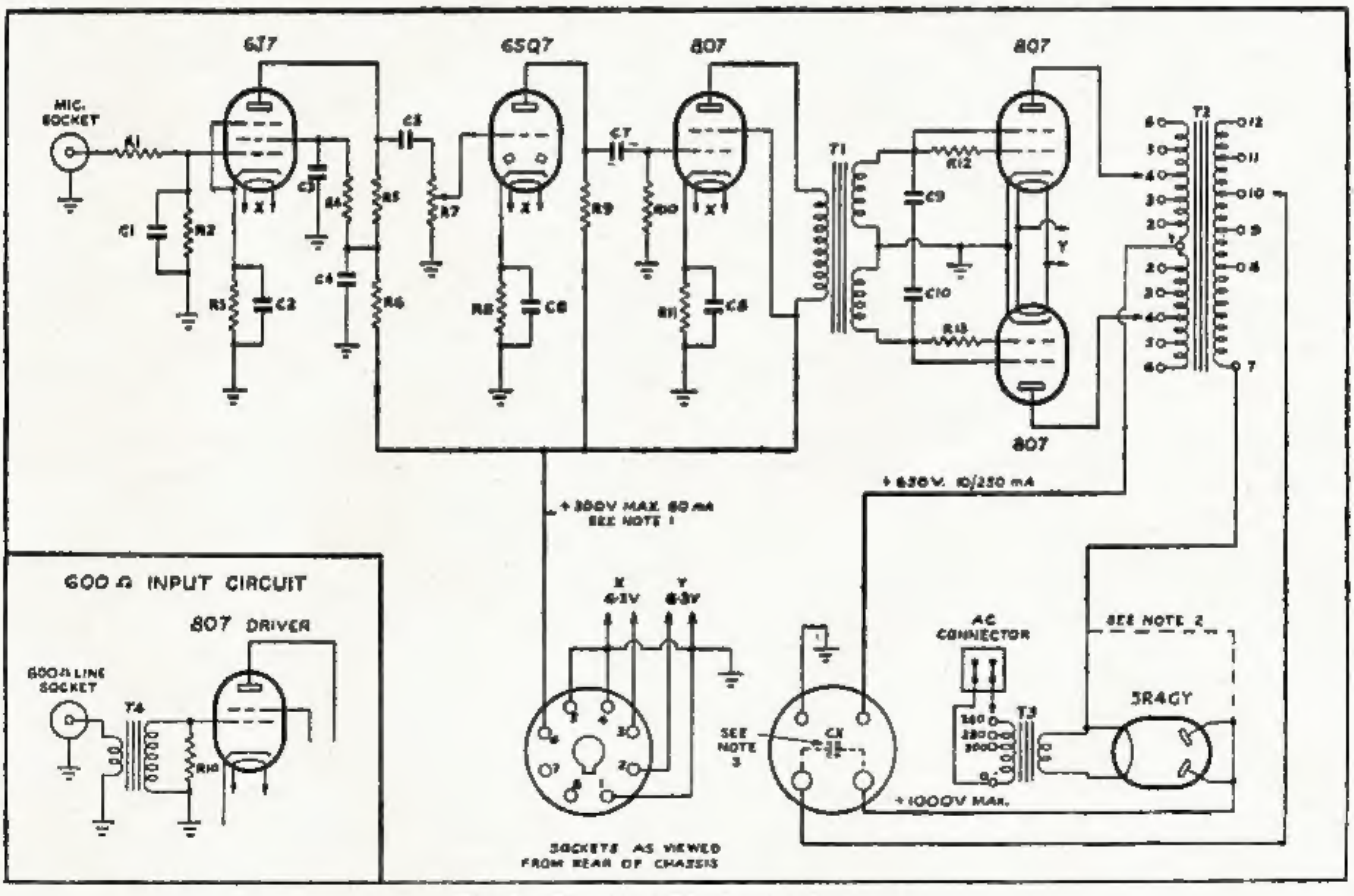


Fig. 1.—Circuit of 75 Watt Modulator.

T1—Type IT588 A. & R. Transformer.
T2—Type MT15A " "
T3—Type PT1516 " "
T4—600 ohm input transformer.
C1—50 pF. mica.
C2, C6, C8—10 μF. 40 v.p.
C3—0.1 μF. 300 v.w.
C4—8 μF. 525 v.p.
C5, C7—0.01 μF. mica.
C9, C10—400 pF. mica.
CX—2,000 volt working, see text.
R1—20,000 ohms, ½ w.
R2—5 megohms, ½ w.
R3—1,500 ohms, ½ w.
R4—1.5 megohms, ½ w.
R5—0.25 megohm, ½ w.
R6—50,000 ohms, ½ w.
R7—0.5 megohm pot.
R8—5,000 ohms, 1 w.
R9—0.25 megohm, 1 w.
R10—0.5 megohm, ½ w.
R11—225 ohms, 3 w.
R12, R13—20,000 ohms, 1 w.

NOTES

1. If voltage exceeds 300, reduce with a resistor and by-pass with 8 μF. condenser.
2. Short circuit plates to filament if negative peak clipper is not required.
3. Up to 0.01 μF. by-pass may be required (inc. r.f. by-pass).

r.f. stage d.c. plate voltage. This will reduce the effective voltage acting on the r.f. stage to zero for the period of time that there is no positive voltage applied, thus causing discontinuity of the carrier power and so-called splatter takes place.

Volume compression and a.m.c. circuits reduce the peaks and increase the average modulation, but the time constants normally used allow high speed speech peaks of some frequencies to pass through to the modulator output circuit. The solution to this is to add a high level negative peak clipping valve with a low pass filter following.

The negative peak clipping circuit is included in the modulator so that those who use the equipment will be provided with the basis for possible improvement of their transmissions if they desire a high average modulation level with minimum interference to other stations.

It is not claimed that the best results will be possible without a low pass filter between the modulation transformer and the r.f. final stage of the transmitter, although useful suppression of high frequency response can be obtained by providing as large a capacitance as possible (2,000 v.w.) in the position marked CX in the circuit.

A filter, if used, will carry the final stage d.c. current and the audio frequency currents. The condensers and reactors should be able to withstand the maximum working voltage continuously; i.e., approximately 2,000 volts r.m.s. at full audio output and 1,000 volts d.c. It is best to use "air core" reactors for the reason that less trouble will be experienced from noisy operation under heavy modulation.

Details of the design and operation of suitable filters, and of other methods of reducing the t.f. channel width will be found in "QST," April 1948; R.S.G.B. Bulletin, February 1949, and in other publications.

VALVE LINE-UP

The modulator includes pre-amplifier stages, and is intended for use with a high impedance microphone. The overall gain is more than sufficient for full output using a D104 type crystal microphone.

A 6J7 metal valve was used in the original unit, and should this type be difficult to obtain, a 6J7G would be quite suitable if provided with a metal shield to completely enclose the valve, grid resistor and r.f. filter circuit. A single ended valve, such as a 6SJ7 is not recommended.

The second valve is a high gain triode type 6SQ7, and this valve and the following valves are readily obtainable.

It was found that a single 807 valve as a tetrode provided adequate driving power for the modulator valves, when used as shown in the circuit diagram. Negative feedback was not necessary, as the distortion visible on the c.r.o. screen was not excessive at 75 watts output, over the voice frequency range for which the unit was designed.

The driver transformer is a type specially designed for use in this circuit, but the modulation transformer is a semi-universal type suitable for use with many other Class A, AB1, AB2, or B circuits, using such valves as 807s, 809s, 830Bs, etc. The maximum signal modulator valve plate current should not exceed 150 mA. d.c. per side of c.t. on the primary side, and the d.c. current through the secondary should not exceed 150 mA. A maximum d.c. voltage of 1,000 may be applied to the primary and/or secondary windings.

MODULATION TRANSFORMER IMPEDANCES

PRIMARY		SECONDARY	
1	H.T.+		
2-2	3,800 ohms	7-8	4,000 ohms
3-3	5,000 "	7-9	5,000 "
4-4	6,600 "	7-10	6,000 "
5-5	8,500 "	7-11	8,000 "
6-6	10,000 "	7-12	10,000 "

The modulation transformer is fitted with a spark gap to provide protection against excessive peak voltages which may occur in the event of loss or reduction of load during transmitter adjustment or tuning operations. This gap should be carefully adjusted so that during full modulation the points are as close as possible, but do not spark over under normal peaks.

The modulation transformer has been carefully designed and is not likely to break down with normal use if the maximum voltage and current ratings are not exceeded. The primary and secondary impedance ranges should be suitable for most modulator and transmitter valve combinations usual with a transformer of 75 watts rating.

POWER SUPPLY

It is necessary now to point out that full power output with low distortion from this or similar audio equipment, is not possible without power supplies having the necessary voltage regulation under minimum to maximum signal conditions.

The power supply for the pre-amplifier and driver stages should provide 275/300 volts at about 80 mA. with sufficient filament windings for all valves (except the 5R4GY). It is advisable to check the filament voltages at the valve sockets, as low voltage, particularly on 807 valves, is to be avoided.

The power supply for the modulator valves is most important, and should be a separate unit with good regulation. The voltage output should be approximately 650 volts at the no signal current of 10 mA. and should not drop to less than about 600 volts if full output of 75 watts is required, the maximum signal current for both valves being approximately 220 mA. It is possible to use up to 750 volts (maximum at no signal) on the valves, and obtain the power output with poorer power supply regulation. A power supply with good regulation and additional current capacity may also be used for both the modulator valves and the Class C final r.f. amplifier.

The degree of voltage regulation required can be obtained by using 866A rectifier valves, with a choke input filter (preferably a swinging choke) and a second filter choke, both with low d.c. resistance of the order of 50-60 ohms. The filter condensers may be 2 μF. after the first choke and 4 μF. after the second choke.

When wiring the modulator, make all earth connections to a bus-bar, and earth at one point only on the chassis.

MODERNISING THE DRIVING STAGES

The 6SQ7 can be replaced by a 6AV6 or one section of a 12AX7, and the 6J7 by a 6BR7 or EF86 or similar low noise pentode.

Alternatively, the 6J7 and 6SQ7 can be replaced by a 12AX7 with both sections in cascade if the microphone has sufficient output.

Fig. 2 is from the S.T.C. Valve Data Handbook, Vol. 2. It is necessary to use separate cathode bias resistors and condensers and suitable plate decoupling. Plate and grid leads should be kept short and separated with shielding if required. For voice frequencies, the cathode and coupling condensers can be reduced in value to limit low and high frequency response.

★

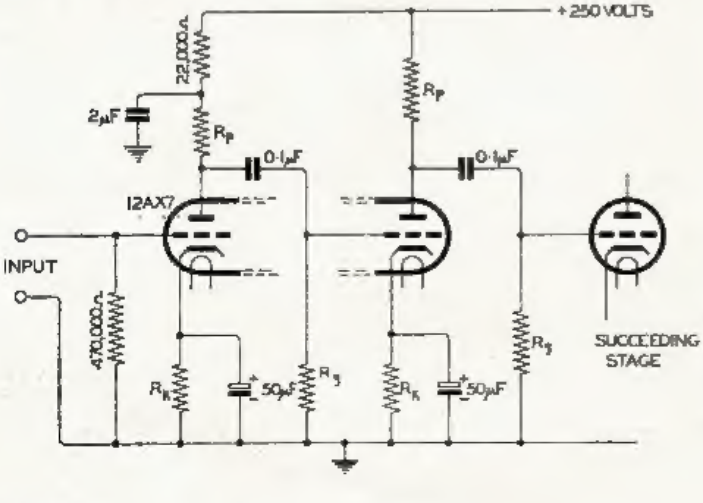


Fig. 2.—12AX7 Cascade Amplifier.

	Cond. 1	Cond. 2	Cond. 3	Cond. 4	Cond. 5	Cond. 6
Plate Load Resistance Rp (ohms)	100,000	100,000	220,000	220,000	470,000	470,000
Grid Leak Resistor Rg (ohms)	220,000	470,000	470,000	1M	1M	2.2M
Cathode Bias Resistor Rk (ohms)	1,500	1,500	3,300	3,300	6,800	6,800
Max. r.m.s. output voltage at 1 kc. for 5% total harmonic distortion	27	31	25	33	28	32
Voltage gain at 1 kc.	3,080	3,420	2,940	3,370	3,420	3,590

DRIVING THE ZERO BIAS 807s

NOWDAYS it is quite common to have a contact on phone and hear, "I am using 807s in zero bias as modulators OM," and find another convert to using our "Maid of all work," the 807, in a new job.

This is quite understandable, for used in zero bias, the 807 is completely tamed, and parasitics are non existent.

For those who have not got access to the original article, it may be as well to run briefly over the circuit, shown at "A" in Fig. 1.

The centre tap of the driver transformer is grounded, and the ends of the secondary windings connected to the screens of the 807s. A 20,000 ohm resistor is connected between the screen and grid as shown, and the plates of the 807s are fed to the conventional modulation transformer. The cathodes of both 807s are grounded.

With this circuit, the driver transformer was the catch, as it had to match the driver tube to the grids of the 807s which had an almost constant impedance of 14,200 ohms, grid to grid. In addition, to obtain 120 watts of audio it was necessary to use a driver which would supply 5 watts of drive to the grids; this meant a pair of 2A3s or equivalent, after allowing for transformer losses, etc.

In our applications, 120 watts is not required, and therefore the most popular arrangement has been to use a 6L6G as driver, which allows us to obtain at least 75 watts of audio, and for lower audio requirements, a 6V6 or 6F6 was adequate. Obviously then, with zero bias 807s, the harder we drive them, the more we get out, up to their limit of 120 watts, provided of course, that our plate voltage, regulation, and impedance match are correct.

Ahead of the driver, we need the usual voltage stages to lift the gain from the microphone to give a voltage which will enable the driver to operate at its correct output. With a crystal microphone, this is about two stages, or with a carbon microphone, one stage.

So much for the circuit as originally described, and now to the circuit described in February 1950 "CQ," shown in "B" Fig. 1.

T1 is a conventional plate-to-push-pull input transformer, such as the type used to feed a 6C5 to a pair of 2A3s; in other words, an ordinary voltage transformer (most of us have a transformer of this type lying about). The centre tap of the transformer is grounded, and the ends of the secondary fed to the grids of a 6SN7, which operates as two cathode followers. The cathodes are not grounded, but are connected as shown to the 807 screens and grids.

The plates of the cathode followers are tied together, by-passed, and supplied with 300 volts. The remainder of the circuit is the same as "A".

Conventional methods of producing driving power in circuit "A" Fig. 1 would involve power consumption largely cancelling the power economy advantages of the Class B operation. Such power need be supplied to each grid only on its positive half of the cycle, however, the cathode follower driver is a natural.

Note there is no connection from the 6SN7 cathodes to ground, except through the grids and screens of the 807s. Thus the plate current flowing in the 6SN7s is equal to the grid and screen current of the 807s, and varies from less than 1 mA. to peaks of 20 mA. with voice modulation. Actually the total current of a 6SJ7 pre-amplifier, 6SN7 two-stage resistance coupled triode amplifier, and the 6SN7 cathode follower stage totals less than 10 mA. under static conditions. Since the driver section works on about 250 volts, its plate power as well as that of the two voltage stages is obtained from the one supply.

Actually the direct-coupled cathode followers supply approximately 10 volts of positive bias with resultant total static plate current on the 807s of 30 mA. Of course with modulation, this plate current increases to 80 to 150 mA., depending on the output required.

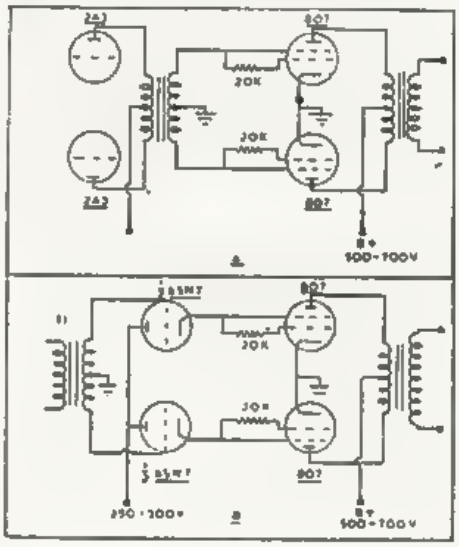


Fig. 1.

The voltage stages required ahead of T1 are important, and it is necessary to see that sufficient voltage is supplied to the primary of T1, otherwise the power output from the 807 stage will be inadequate

It is recommended that the minimum required from a crystal microphone would be: a 6SJ7 high gain amplifier, followed by two triode sections of a 6SN7 as resistance coupled triodes. In the writer's case the voltage stages used were:—

Pre-amplifier on operating table, 6SJ7 and 6J5 to 500 ohm line, 6SN7 as two resistance coupled amplifiers, feeding T1, cathode followers and then the 807s Class B stage. From the 500 ohm line, all other stages are in the main rack of the transmitter. With this line-up, the gain control is one-fourth on for 100% plate modulation of a 50 watt power amplifier, i.e. 25 watts of audio. The meter reading the combined plate currents of the 807s varies from a resting current of 30 mA. to about 80 mA. on peaks, which means that for 25 watts of audio, the 807s are simply loafing along. The plate to plate impedance was 10,200 ohms, and the plate voltage 500 volts, rather poorly regulated.

IMPEDANCE OF CLASS B STAGE

The following plate-to-plate impedances for the 807 Class B stage are appended for readers who have not a copy of the original article.

Case	1	2	3	
Plate Volts	750	600	500	
Plate to Plate load	6650	5050	4000	ohms
Output	120	90	72	watts
Max. av. anode current (two valves)	240	240	240	mA.

Note.—If the Class B stage is run at lower plate currents or voltages, the plate to plate impedance will be different. The calculations are very simple with the following method, which is accurate enough for our requirements.

CALCULATING IMPEDANCE

In a Class B stage at any instant the grid of one tube will be driven positive and the other tube driven past cut off, and therefore in calculating impedances we need only consider one tube. As far as the one tube is concerned the primary of the output transformer is a resistance and therefore we have this plate load (R_p) and the resistance of the Class B tube in series across the power supply. We can assume that about 80% of the power supply voltage will appear across the plate load R_p as audio voltage, so if our plate supply is 500 volts, 400 volts peak of audio will appear across the plate load R_p. This gives us our voltage for calculation.

Now we want the peak current. Manufacturers' characteristics give the maximum average current for two tubes (sine wave input), so to find the peak current we divide the average current by 0.636. Therefore our peak current for Case 3 in the lists above is: 240 mA. $\div$ 0.636 = 377 mA. = 0.377 Amp.

Then from $R = E \div I$ we have: $400 \div 0.377 = 1061$ ohms for one tube.

The plate to plate load for two tubes will be four times this value or 4244 ohms, which is very close to the manufacturers' ratings (Case 3).

The audio output can be found by the simple formula $W = (I \times E) \div 2$ and working on peak values found, we have $(0.377 \times 400) \div 2 = 75$ watts output.

Below is the case of Class B 807s to give 100% modulation of a 50 watt carrier (25 watts of audio). Example:

Supply voltage 500 volts.

Av. I_p (2 tubes) = 100 mA. = 0.1 Amp.

Then E peak $= (500 \div 1) \times (80 \div 100)$
= 400 volts.
(i.e. 80% of supply voltage.)

Peak current $I_p = 0.1 \div 0.636$
= 0.152 Amp.

Plate impedance (one tube) $= E_p \div I_p$
$= 400 \div 0.152 = 2630$ ohms.

Then plate-to-plate impedance =
$2630 \times 4 = 10{,}520$ ohms,
and audio output $= (I_p \times E_p) \div 2 =$
$(0.152 \times 400) \div 2 = 30.4$ watts.

—J. C. Duncan, VK3VZ

CALCULATING INPUT IMPEDANCE OF GROUNDED GRID LINEAR AMPLIFIERS*

JOHN WEATHERLEY,† VK5QL

Impedance matching in grounded grid linear amplifiers seems to be a problem worrying many Amateurs. The following notes are based on articles published over the past few years in British and U.S. magazines. The notes refer to tetrodes and pentodes connected as high-mu triodes as these are probably the types for which this type of information is difficult to obtain.

In a g.g. amplifier there are the same number of impedances to be matched as in a normal grounded cathode amplifier. Impedance matching is probably of greater importance in a g.g. stage because the input and output impedances appear in parallel to the driver stage (see Fig. 1).

It will be seen that any variation of either impedance will affect the other; this can demand high drive. The actual basic circuit with impedances indicated is shown in Fig. 2.

The plate load impedance Z_1 is calculated the same as for any power amplifier. The input impedance is a different matter and apart from being complicated, requires tube data not normally available. Fortunately a simple approximation can be made for the input impedance of g.g. tubes connected as high-mu triodes.

First the conductance is calculated—this is the opposite of impedance. If the plate resistance R_p is much greater than the load impedance Z_1 and the mu of the valve remains much greater than unity, the input conductance g_i can be shown as

$$g_i = u \div R_p = gm$$

where gm is in umhos,
R_p is in megohms,
u = amplification factor.

This represents the tube conductance in g.g. As impedance is the reciprocal of conductance the input impedance Z_g may be determined by dividing the gm into 1 (one). The tube transconductance can be readily obtained from tube tables and if this is in turn divided into 1 (one) will give the input impedance Z_g in ohms.

Fig.1.

For example, the 813 has a transconductance of 3,750 micromhos, the formula becomes $10^6 \div 3750$, which becomes 267 ohms or the impedance to which the driver must be matched to give maximum transfer of power

It should be remembered that tubes in parallel will behave the same as resistors in parallel and two 813s in parallel would thus have an input impedance of 133.5 ohms.

Table 1 lists some of the tubes found to perform well with both control and screen grids grounded and in the case of pentodes with separate suppressor with this grounded also. The transconductance was obtained from manufacturers' data sheets and input impedance from the formula $Z_g = 1 \div gm$, where gm = transconductance in mhos.

Valve	gm μmhos	Input Z ohms
6AG7	11,000	91
6V6	3,750	267
6L6	5,200	192
802	2,250	444
837	3,400	294
6146	7,000	143
4E27	2,800	357
4E27A	2,150	466
4-125A	2,450	408
813	3,750	267
803	4,000	250
4-250A	4,000	250
1625 (807)	6,000	167
EL34	11,000	91
EL38	11,000	91
4X150A	12,000	83

Table 1.

[The above gm only apply at a specific series of voltages.—Ed.]

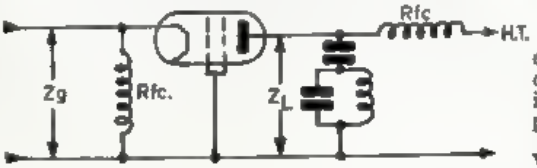


Fig.2.

* Reprinted from S.A. Division, W.I.A., Bulletin.
† 10 Green Street, Elizabeth Park, South Aus.

Trade Review

V.T.V.M., MODEL 300H

The new v.t.v.m. model 300H by Ballantine Laboratories, Boonton, N.J., U.S.A., is capable of measuring voltages as low as 30 microvolts and as high as 300 volts over a frequency band of 10 c.p.s. to 1 Mc.

The scale is logarithmically expanded and individually calibrated throughout its length of five inches. Accuracy is 2% to 700 kc. and 3% above, at any point on the scale.

Full technical information is available from Warburton Franki offices in Queensland, New South Wales, Victoria, South Australia, and in Western Australia from Tough Instrument Service Co.

"AN AWARD OWED"

Conditions these days, are not very good
And QSLs aren't returned, as I think they should
At times I hear prefixes from all over the place,
And so do others who get in the race.
It's very enjoyable to work a rare station
And receive a card without much frustration.
But sometimes I find it extremely hard
To persuade a station to send me a card.
And as for Certificates, I seem to recall
That I've won a couple, but they're not on my wall.
Is it procrastination, or writer's gout,
That prevents 'em from sending them out?
I'm referring, of course, to the R.D. Award
And their reluctance to send one to Claud.
I have heard just lately of tidings dire,
That these awards and records went up in a fire.
It must have been serious, of that I've no doubt,
'Cos it's taken a year to put fire out.
In the meantime, of course, the contest continues.
But how can you win? They're all agin youse.
The whole complete set-up has a certain aroma,
Why in heck won't they issue an R.D. diploma
To those willing log checkers who worked night and day?
I "dips me lid", they're not in the fray.
But that elusive character, the award designer,
Where in heck is he, on a slow boat from China?
In a recent "A.R." some mention was made
That the necessary blocks didn't quite make the grade.
"Get on it" chaps, their excuses are worn,
Why try to hand us "a very raw prawn".
The contest itself has meaningful aims
To remember our comrades, to treasure their names.
In conclusion, may I have this to say,
If you can't do the job, you'd best give it away.

—C. P. Singleton, VK4UX.

SPACE COMMUNICATIONS IN AUSTRALIA

Australian Amateurs lead the world in reporting of Oscar 2! Congratulations, chaps.

Oscar 2 is dead, though its memory is still with some of us, but Oscar 2 is known by many more of the VK boys. We watched its progress, measuring its temperature, its speed, its height, placing a protractor along the equator and knowing the inclination to be 72 degrees at the equator, produced the orbital path across our continent with a few figures, and the knowledge that the earth moves from west to east at 15 degrees each hour (at the equator), worked out the number of degrees per hour we move here at Sydney. (For those interested, it is 40 naut. miles per degree.)

Thus after having worked out the number of orbits per 24 hours (60" times 24 hours/90" = 16 per day), we were able to make our own predictions as to when and where Oscar would be at any given time. All States had their own Co-ordinators who were supplied with full data on how to find Oscar, Doppler shift, slant angle, and so on.

We ran a Oscar 2 network on 3.565 Mc., where you could hear what was going on daily. The operators of this net were VK3ABP (Bill), VK7PF (Peter), VK2WH (Hugo) and VK2HO (Roy). We tried the 40 mx band, but it was a wash out. I also tried out 21 Mc. but it was too inconsistent.

At headquarters here in Sydney, phone calls, letters, telegrams and visitors were frequent daily. Much information had to be sent across the continent each day, not to mention the report form service. The W.I.A. N.S.W. Division were busy printing the forms, and also printed a special sheet on how to find Oscar 2, etc., thanks to Tim VK2ZTM and Tony Patterson. In N.S.W. there were small country groups under selected leaders, and they were the Lismore group, Woolongong, Blue Mountains, Tumut, Kulnura, Gosford, Canberra and s.w.l's. all over the State. Single operators in country towns did a very good job, not forgetting the many v.h.f. groups in all the capital cities.

VK2ZCF ran a tape on 144 Mc., a recording of Oscar 1, and from this all were able to get some idea what to look for, and what the Doppler shift sounds like, how to count the HI's, etc. This proved very useful. VK2ZJC, at Kurragong, did a sterling job and logged the greatest number of fly-overs in his State, giving times, HI rate, and predictions. Publicity was given to the project via t.v., radio stations, newspapers, magazines, bulletins, etc.

Reports are flowing into Oscar headquarters from all parts of the world. Special honors are due to the Amateurs of Australia, Finland, Austria and England who are providing a great volume of excellent data. Reports from all call areas in W land are excellent. Ed Hilton, W6VKP, states that Oscar 2 reports show a much higher degree of competence and awareness than did the reports received from Oscar 1. Obviously the self-training aspect of Amateur Radio is working well! Many Amateurs are computing Doppler curves, determining satellite slant range, and figuring the period of the satellite and making their own orbital predictions. Congratulations!

To date, 428 stations have reported data to headquarters, with more mail arriving every day. Most reports are of such excellence to enable the Data Reduction Group to directly transcribe them to I.B.M. punch cards for quick sorting and analysis. This operation is now in progress under the direction of Harley Gabrielson, W6HEK. Early analysis indicates satellite temperature remained relatively constant, rising slowly from a lunch figure of 20°C. to 30°C. by revolution No. 293. By revolution No. 294 the package temperature was up to 44°C. and by revolution No. 295 the temperature had soared to 58°C., which is close to the temperature of transistor failure.

Headquarters in America send their congratulations to Amateurs in Australia. Through your efforts the number of reports from VK (based upon Amateur population) are first compared to all countries, and they are excellent in quality. One of the Oscar crew works at I.B.M. and all Oscar 2 data is being placed on punched cards to run through a computer. This will greatly aid the analysis of data. Headquarter staff offer their profound thanks to the VK gang. "It is a pleasure to obtain such co-operation, which stresses once again the International friendship and co-operation that exists within the ranks of Amateur Radio! I am sure that the long-range effects of the Oscar programme will be of great benefit to our hobby."

In conclusion, I wish to thank all who participated in this project. I want to particularly thank all State Co-ordinators, VK1ML, VK3ABP, VK7PF, VK2WH, VK4ZBT, VK5ZX, VK6ZDS, and VK9AU for a very excellent job indeed.

Further, I thank VK2HZ, VK2PF for publicity. Last, but not least, the Council of the W.I.A., N.S.W. Division, for co-operation.

Chaps, don't stop now! Oscar 3 is on the way, and let us be on top again in this next project. Oscar 3 will be a communications satellite not unlike Telstar.

Cheers and 73,

—Roy Hart, VK2HO,
Australian Co-ordinator.

NATIONAL FIELD DAY CONTEST RESULTS, 1962

Participation in this year's Contest was much the same as last year, judging by the number of logs received. However, activity and scores were greater than last year. The number of logs sent in for Section B unfortunately was very small again, although apparently quite a few stations were active in this section.

A lot of very fine, and obviously very effective, portable and mobile equipment was in operation during the Contest week-end. Everyone seems to be quite happy with the rules as they are at present and with the re-organisation of Civil Defence and, we hope, a revival of W.I.C.E.N. in all States, we hope to get even more participants in the Contest next year.

Here are some details of some of the more elaborate field day set-ups:—

VK3APC—Moorabbin & District Radio Club, with six operators and 10 assistant operators had transmitters operating on 3.5, 7, 14, 21, 50 and 144 Mc.—all with their own receivers and antennae. Power provided by 1.5 kva. alternators. On 21 Mc. they had a quad for their antenna!

VK5LS—Elizabeth Amateur Radio Club had eight operators in the field and worked four stations on 3.5, 7, 14, 21, 50, 144 and 288 Mc.

VK6VT—The V.h.f. Group of W.A. also had eight operators who used all bands except 288 Mc. Four transmitters were used, including a Geloso GR222 and a Collins 32SI.

VK3WI went out to Mt. Blackwood with nine operators and worked the same bands as VK3APC. Equipment used included No. 22 and No. 122 sets and quite a bit of transistorised gear and transistorised power supplies.

VK3CS had also eight operators working 80, 40, 20, 15, 6 and 2 metres. Equipment included a s.s.b. transceiver on the h.f. bands, among others, and an a.m. rig and a f.m. transceiver on 2 metres.

We regret that lack of space does not permit us to list the wide variety of equipment used by all the other stations operating in the field.

We have again received several reminders about outstanding Certificates and would like to assure all those concerned that they have not been forgotten. Certificates will be issued as soon as possible.

—Federal Contest Committee, W.I.A

AWARD WINNERS

Section A (Portable Phone):

VK2AAH—H. F Burtoft	515	pts.
VK3AUL—A. Lock	806	"
VK4ZAZ—J. L. C. Bickford	60	"
VK5BQ—B. Cleworth	426	"
VK6JO—R. J. Skevington	224	"
VK7TT—T. J. Tongs	500	"

Section B (Portable C.W.):

VK2JM—J. A. Mead	56	pts.
VK5TL—T. Laidler	50	"
VK7CH—C. Harrisson	288	"

Section C (Portable, Multi-Op.):

VK1SB—S. E. Brown	400	pts.
VK2SW—S. R. Ward	582	"
VK3APC—Moorabbin & District Radio Club	1783	"
VK5LZ—Elizabeth Amateur Radio Club	1847	"
VK6VF—V.h.f. Group of W.A.	1125	"

Section D (Fixed Station):

VK2APK—D. Kiesewetter	495	pts.
VK3XB—I. Stafford	565	"
VK4UX—C. P. Singleton	105	"
VK5CV—G. A. Lane	200	"
VK7SM—S. G. Moore	575	"

Section E (Receiving):

WIA-L2033—D. W. Shepherd	335	pts.
WIA-L3099—J. Jobson	425	"
VK5—K. Wehr	470	"
WIA-L6021—P. Drew	175	"
WIA-L7012—G. F. Sharpe	540	"

INDIVIDUAL SCORES

Section A (Portable Phone):

	Pts.		Pts.
VK2AAH	515	VK4HZ	*
2RX	204	5BQ	426
3AUL	806	5GG	233
3HE	385	5YA	64
3ASW	207	5TL	47
3YA	194	5PE	20
3ZCG	182	6JO	224
3JO	128	6MM	68
3AUC	104	7TT	500
3EM	68	7BT	117
3LW	49	7JB	58
4ZAZ	60		

* Check Log.

Section B (Portable C.W.):

	Pts.		Pts.
VK2JM	56	VK7CH	288
5TL	50	7LJ	104
5PE	10		

Section C (Portable, Multi-op.):

	Pts.		Pts.
VK1SB	400	VK3WI	1455
2SW	582	3UJ	743
3APC	1783	5LZ	1847
3CS	1552	6VF	1125

Section D (Fixed Station):

	Pts.		Pts.
VK2APK	495	VK4UX	105
2AHV	315	4ZAZ	75
2ANO	290	5CV	200
2DU	175	5EQ	145
3XB	565	5LL	140
3AST	470	5LD	*
3AXT	425	6AS	*
3AKN	400	7SM	575
3ABP	240	7KH	210
3RJ	WD	7BJ	85
3ADU	66		

* Check Log.

Section E (Receiving):

WIA-L2033—D. W. Shepherd	335	pts.
SWL-VK2—R. B. Pinning	225	"
WIA-L3099—J. Jobson	425	"
WIA-L3042—E. Trebilcock	420	"
SWL-VK3—D. Wilke	165	"
SWL-VK5—K. Wehr	470	"
WIA-L5015—W. J. Clayson	395	"
WIA-L5030—T. R Hutchesson	390	"
SWL-VK5—Miss O. J. Martin	320	"
WIA-L6021—P. Drew	175	"
WIA-L7012—G. F. Sharpe	540	"
SWL-VK7—G. C. Johnson	510	"

JAMBOREE-ON-THE-AIR

Please Note: Correction to August issue "A.R." page 9. **The duration of the Fifth Annual Scout Jamboree-on-the-Air is for 48 HOURS, not 24.**

In order to avoid the confusion of previous years, the times have been given as Eastern Australian Standard Time, so here they are again. The event will take place between 1000 hrs. E.A.S.T. on Saturday, 20th October, 1962, and 1000 hrs. E.A.S.T. on Monday, 22nd October, 1962.

Plans for the Victorian participation are well under way. Every Victorian Scout Group has received two forms. One is to be returned to me as soon as they have arranged their participation, giving the call sign of the Amateur Station and the bands to be used. This information will provide a list of both local and DX stations. Those who will be using DX bands will be listed and published by the World Scout Bureau throughout the world before the event.

Groups who are unable to contact an Amateur Radio Operator have been asked to let me know so that assistance can be given if possible.

The second form is the log sheet for use during the event, to be compiled by the Group in conjunction with the Radio Amateur and returned immediately after the event. This will enable a report to be compiled of the Victorian participation.

The Boy Scouts World Bureau will again be operating its own station from its head office in Ottawa, Canada. This year the call sign is VE3WSB (VE3 World Scout Bureau), using the following frequencies:—

10 mx band—28,490 to 28,510 kc.
15 mx band—21,195 to 21,210 kc.*
20 mx band—14,195 kc. (listening also on 14,210 kc.)*
40 mx band—7,250 kc.

* On these bands, VE3WSB will give preference to stations outside Canada and U.S.A. at all times.

Amateurs requiring further information or who have any suggestions which might help, are asked to contact Lin VK3ARL or myself (VK3AGD) any Tuesday or Thursday evening on 80 metres after 2030 hours E.A.S.T.

—John S. B. Y. Woodburn,
Branch Organiser, Boy Scouts Ass.

— . . . —

SCANDINAVIAN CONTEST 1962

The Scandinavian Activity Contest, 1962, will be held on the 3.5, 7, 14, 21, and 28 Mc. bands. C.w.: 1500 GMT, Saturday, 15th Sept., to 1800 GMT on Sunday, 16th Sept. Phone, 1500 GMT, Saturday, 22nd Sept., to 1800 GMT on Sunday, 23rd Sept.

Non Scandinavian stations call "CQ SAC" on c.w., and "CQ Scandinavia" on phone. The Scandinavians will use "CQ-Test" and "CQ-Contest."

Logs are to be mailed not later than 15th October, 1962, to the Traffic Department of E.D.R., P.O. Box 335, Aalborg, Denmark.

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

FILTERS

Editor "A.R.," Dear Sir,

In his article on "The Importance of Adjacent Channel Selectivity" (August "A.R.," p.8) Mr E. C. Hulme, VK2EN, inferred, possibly unintentionally, that crystal filters are inferior to mechanical filters. I would like to make the following points.

1. It is just as impractical for the average Amateur to construct a mechanical filter as it is for him to build a modern crystal filter No Amateur, to my knowledge, has attempted to manufacture a mechanical unit and the reasons for this are illustrated by VK2EN's comments on the "works" of such devices. Those crystal units described in constructional articles cannot be considered as representative of modern filter units as they invariably use obsolete types of crystals. A modern crystal filter uses hermetically sealed, plated crystals carefully manufactured for frequency, inductance and lack of spurious responses. The average Amateur just has not the facilities available to make such crystals and thus he must purchase a "black box" to get a first class unit.

2. If the filter is considered as a "black box" supplied by a manufacturer then neither the mechanical nor crystal type of unit is particularly difficult to instal provided the directions are followed

3. Shape factors obtainable with mechanical filters are also possible with crystal filters, e.g. a six-crystal filter can be built with a shape factor of 2 : 1.

4. The insertion loss of a crystal filter is usually considerably less than that of a comparable mechanical unit, e.g. 5 db. as compared to 20 db Figures on inband ripple are of the same order, viz. 1 db.

5. Crystal filters can be made for frequencies between 50 kc. and 40 Mc., whilst, at the moment, mechanical filters are limited to frequencies below 500 kc. This means that in receivers employing only one i.f. and a mechanical filter, the i.f. is, of necessity, low and image responses are still a problem However, if the one i.f. is of the order of 5 Mc and a crystal filter is used, then good selectivity is obtained where it is most needed and images are no longer a problem.

6. In all fairness, however, I would point out that within the range 400-500 kc., the mechanical filter is smaller and usually more economical than the crystal type.

Summing up, it seems the mechanical filter is the better proposition for the Amateur i.f. s.s.b. exciter but there is no doubt that the h.f crystal filter is the device for the modern communications receiver whether it be for c.w., s.s.b. or a.m. work.

—David Rankin, VK3QV.

"A.R's." DX Editor, Al VK4SS

Rig, 80 through 10 mx, 70 watts. Rx AR88 and home brew DXCC on 7, 14, 21 Mc. Forty Awards and Contests. Many times VK/001. C.H.C., A.H.C., Q.C.W.A., etc. Countries worked, 230 plus.

SPLATTER

Editor "A.R.," Dear Sir,

I would be the last to brand VK5PU's criticism of my article on "Splatter, Its Cause and Prevention" ("A.R.," July '62) as hysterical.

No claim was made by me for originality in application of a shunt diode to provide a conductive path for excessive negative swing of modulation potentials; even the generation of ringing frequencies dependent on the distributed constants of open circuited inductors is a well known factor However, the realisation that this phenomenon is the basic cause of monkey chatter heard during excessive modulation, and NOT audio frequency harmonics of the fundamental speech signals seems to have escaped attention

The "Amateur Bible" (A.R.R.L. Handbook, p. 285, 1962 edition) persists in the erroneous explanation that splatter is due to audio frequency harmonics generated by clipping of the modulation envelope, consequently confusion among its devotees is explicable.

Permanent "Negative Cycle Loading" as advocated by Reinartz ("A.R.," March '62) is a decidedly amateurish and brute force method, wasteful of audio power, and a chronic source of audio frequency distortion at all levels.

Low pass filters in the modulated amplifier h.t. supply undoubtedly assist in reduction of modulation by lower order audio harmonics of speech frequencies, and should be used in addition to any form of Negative Cycle Loading or Clipping. At the radio frequencies generated by ringing of open-circuited modulation inductors the usually jumble wound filter coils no longer operate as essential inductances but by-pass increasing levels of splatter producing energies.

In conclusion, I would like to stress that my article was intended to place before the Amateur fraternity a simple method of serious splatter cure, not requiring specially wound and insulated diode heater transformers. Also to VK2AZG I would like to publicly express my appreciation for his assistance in making available the 6R3/6AL3 diodes.

—J. G. Reed, VK2JR.

DX

VP4, OA4, BV, ZM7, 7G1, FP, AC5, MP4, ZC6, TY2

Sub Editor: ALAN SHAWSMITH, VK4SS, (Phone 4-6526—7 a.m.-4 p.m.
35 Whynot St., West End, Brisbane, Qld.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

These last two weeks of July, conditions have been near an all time low. However, there is quite a bit of mail to hand, which indicates that DX will be worked, no matter what.

NOTES, NEWS AND ADDRESSES

Gus has been having extreme difficulty getting licences for VQ8s. G2MI is working on it. However, two VQ8s will accompany Gus to operate from Chagos and Agalegas, if licence difficulties persist. Gus is in very close touch with R.E.F for operations from Tromelin, Comores and Europa. Gus and a VS9 will try to sneak into Yemen for 4WI operations. Chances are very good. No definite time yet, probably in late July or August. After Yemen, a possible try for VS9K, then to EP, YA and 9N1. Then to Calcutta. He has a letter from the King of Bhutan inviting him to operate from AC3 and AC5. Gus has changed his low frequency operating slightly. 0000z 40 c.w. 7001, 0030z 3502 kc. c.w., 0100z on 7002 s.s.b. Gus has been operating as VQ9C from Cosmoledo Is. This will not be considered a new country due to its proximity to the Aldabras. You better keep your ears open on Gus' frequencies, because he may come on with some rather funny sounding calls. It won't be because he ran out of coke, but because he may have a little trouble getting the VQ8 calls. In this case he will go there and operate anyhow with call signs like VQ9A/BC and VQ9A/EA. Gus will probably make all of the VQ8 islands, except Rodriguez. His operating times have not been favourable to work VK.

Ascencion Island—ZD8RN has been heard, between the hours of 2200-0200z. He was heard two days in a row on 14053. Times and frequencies: 14053 at 2130z, 043 at 2315, 061 at 0041. QSLs go via P.A.A., Box 4187, Ascencion Is., via Patrick AFB, Florida.

KG6 Land: The U.S. Navy has turned over the administration of Saipan to the Department of Interior, while retaining control over the rest of the Marianas. KS6BGB says the Islands of Saipan and Rota may be considered for separate status.

Timor: CR8AB has now gone QRT. QSLs go via W4QCW.

Dick W0MLY has been operating as TY2MY from Dahomey. His next stop will be Togo. On 1st July, Ruanda-Urundi became two independent states. Now called Rwanda and Burundi. Dick W0MLY will probably try for these after leaving Togo.

Rhodes: SV0WH and SV0WY are due to be on from Rhodes this month.

VR3AA has been worked on 14001 kc. at 0745 and 0830z. His name is Herb, and he has a 4-wave rhombic on U.S., with 300w. QSL to Box 38, Nukuu.ofa, Tonga Is. He usually comes on around 0800 GMT.

Christmas Is., VK9: Bruce VK9XO was wkd. 2nd July, his c.w. (14305) to K5ADQ's s.s.b. on the same freq. Anyone have any info on this one?

8G1DP XT2Z, 5T5AH QSLs: Louis 8G1DP requests that all stations still needing a QSL for his 8G1DP, XT2Z or 5T5AH operations, forward their QSL directly to Louis Kaiser, P O Box 1981, Kumasi, Ghana, West Africa. The return QSL will be forwarded via the Bureau.

All the above by courtesy of Bev. W4CKB.)

FM7WQ is on s.s.b. (14304) with the travelling HB9TL s.s.b. rig.

October?. VS9 boys from Kuria Muria Is. for a new one.

Above two paras. from Bob K8CQM.)

DL9KP is off to 3A2 for a short spell. All modes and bands. Call will be 3A2BZ. Try around 2100z for a QSO on 20 mx.

Alan VR4CV will be QRT at Honiara on Sept. 5. He will then spend a week in VK9 before coming to VK land. If you haven't already worked him you may have time to snatch a QSO after reading this before he packs up. Try 14 Mc. in the late afternoons. Try 7 Mc. around 1200z and freq. 7010 or 7020 kc. Also 80 mx around this latter time.

Several Ws are operating from Pago Pago, KS6. Very early morning or afternoon is OK. K5KOR/KS6 is one in particular.

PZ1AX is often audible here on 3.5 Mc. s.s.b. around 3790.

Brian VK5AB reports that he is now almost to the 300 wkd. mark. When this happens he will QRT. (Are you serious OM?)

Frank VK2QL reports that the QRP Club is increasing in membership and is considering running a contest. This should be very good. If your rig is designed to run at 100w. or less then you simply get in touch with Frank or drop a line to W6CIS, 1783 Montrose Road, Concord, California. I am a member and I find the common meeting ground of its members around 14100 kc. late afternoons a very good place to pick up a little DX.

Alf VK3KB reports having followed Dick's (W0MLY) vagabonding through Africa and working each prefix as it is created. He also has already a number of the T series QSLs. Also has a QSL from CR8AB.

QTHs FOR QSLs

KS6AM—American Samoa. QSL via W1BYH.
VP2KJ—QSL via Curt W4SSU.
TA4RZ—QSL via Fla. DXer Ross K4WIS.
KS4BF—Serrana Bank DX-pedition. QSL via W4DQS.
VQ9AA—Gus on Aldabras. QSLs to W4ECI.
MP4TAO—QSL to DJ1BZ.
VR5AA—Herb Chapman, Box 38, Nukualofa, Tonga.
VQ1DR—Zanzibar, via W2TSD.
CR5SP—Silva, Sao Thome. QSL direct.
KH6ENT/KS6—1835 Nicholson Dr., Baton Rouge, La.
HM1AP—Via K6QPG.
ZA1GB—Via W2FZY.
VR3S—WA6MAZ.
OD5LX and OD5LJ—C/o. P.O. Box 1217, Beirut.
OD5AV—C/o. P.O. Box 235, Tripoli.
VP6KL—F. Roberts, Waters Meet, Worthing, Christ Church.
VP6PJ—C. Jones, Hill Crest, Palm Beach Gap, Hastings, Christ Church.
VP6RG—R. Gibbs, Beechgate, Hastings, Christ Church, Barbados.
ZK2AD—L. T. Hack, C/o. Radio Station, Nuie Island, via New Zealand.
2A2BT—N. Fitch, 79 Murchison Rd., London, E.10.
FW8AB—Try via FK8 Bureau.
CE0AD—Via CE QSL Bureau.
VP2LH—Via R.S.G.B.
HH2JV—J. Vabre, P.O. Box 671, Port-au-Prince, Haiti.
UJ6AC—Box 88, Moscow.
5H3HZ—P.O. Box 2387, Dar-es-Salaam, Tanganyika.
XE1IL—P.O. Box 907, Mexico City.
XE1FW—P.O. Box 314, Tolouca.
IIPP—P O. Box 347, Genoa.
AC4NC—N. Chakravarti, Indian Mission, P.O. Gyantse, Dhasa Tibet.
KC4USS—Gary Ernst, RM2, U.S.N., U.S.S., Burton Island, AGB-1 F P.O., S.F.
VK4IC was active from Willis Is. some time back. Pse can anyone help with QTH?
VK0WB has sent QSLs to all VKs worked during 1961 from Wilkes.

Dick W0MLY is about QRT from TZ2. 5T5 is to be his next prefix.

Gus W4BPD is about to commence from Chagos Is.; period 10 days.

Gus and Dick move about so fast that it is impossible to keep you posted with their latest whereabouts.

Ian Thomas, W1A-L3065 kindly sends this note from ZL3OX on 160 mx operation. Freq. used by ZLs are 1.875 to 1.900 Mc. South Americans are to be found anywhere between 1.75 and 2.025 Mc. North Americans on the East coast use mainly the freqs. 1.8 to 1.825. Those on the West side 1.975 to 2.00. Many Ws are calling CQ VK/ZL.

ACTIVITIES

Ray VK2RA comes up with these wkd. 7 Mc. c.w. FK8AU, KX6DK, VR1M, KC4USB, VR4CV, etc. 7 Mc. s.s.b. FW8BH, FK8AU. 14 Mc. c.w. W0MLY/TJ8, TY2MY, K5FOQ/KS6, VQ9A/7, TG9AD, YU3YU, YV5AE, etc. 14 Mc. s.s.b. DLs, 4X4DK, ZS3JM, VR3B. 21 Mc. Ws only. (Hope you are 100 per cent. again, Ray OM.)

Hal 4DO reports condx very bad. He wkd. on 14 Mc. c.w. KX6DK, KL7AY, plus several Asian and Nth. Americans.

Yours truly (VK4SS) managed these KR8AP, K5KOR/KS6, OA4PZ, VE0MC, K2QGC/KG6 (Saipan?), 5V4MY, FW8BH, TG9AD on 14 Mc. 40 mx c.w.: KX6AZ, VR4CV, YV5BE. 80 mx VR2EG, VR4CV, VR2DK.

One of the most noteworthy pieces of DX info to hand is the first country wkd. on 1.8 Mc. **VK3AKE QSOed FY7EN with S8 sigs.** Don VK3AKN reports quite a bit of activity on this acquired band. He says VK4RZ was the first to show on s.s.b., but others are now using this mode. (I would appreciate any more DX wkd. on this band.)

Dietmar VK2APK reports over 20 Certificates to hand. Soon we will have another CBC'er. (What abt. the QRP Club OM?)

Frank VK2QL has had a quiet month as he has been busy with other things. On 7 Mc. wkd. VS1FJ 14 Mc.' VR1G, VR1J, K5KOR/KS6, and TY2MY and 5V4MY were two that got away. Frank also wkd. FW8BH on 7 Mc., which gave him a total of 107 on this band. QSLs recd. were HC1AG, DL1FF (both 3.5 Mc.), KS4BF, UT5EH, VQ4HE, CX2BT, 9Q-5AAA, UA3AC, UO5PK (all 7 Mc.).

Eric BERS105 logged these 3.5 Mc.: VR2EG (0900z) 7 Mc. c.w.: DJ0CU, DU7SV, KL7PAG, KX6DK, SP8AJJ, UA4RA, UB5KEP, UP2KAF, VK8UX, VR2DK, YV2BJ, 5H3GC, 9M2FZ. He recvd. these QSLs: CR7IZ, HC4IE, KR6AM, VE-2AYY, UH8KAA, VK9RR, VS9KAC, YJ1MA, ZC4PB, 5N2LKZ, 6W8DE. Eric advises that CR7IZ, whose name is Rutelo Grace, will be returning to the mainland very soon from Ibo Island. He is mostly known for his c.w. activities, but also uses s.s.b.

Ted VK5JE, the 7 Mc. specialist, comes up with some very good ones. KX6AJ (1130z), YV5BLT (1115z), YV2BJ (1100z), HK1QQ (1055z), VP5BL (1100z), 9Q5AAA 2200z), G3GFF/MM (1200z), AC4NC (1000z), XE1OK, YJ1RH, KC4USV, KL7DQD, etc.

Ian Thomas, L3065, heard: 20 mx s.s.b. VE-7ZM, DL1VR, I1RM, GI6TK, VK0DS, KG6IJ, TG9AL, YJ1RH, ZL4JF, XE1CV, VK2VC/LH, VR3S, VK9NT, VR7MD, W6CLI/KP6. 21 Mc. s.s.b.: TI2HK, ZE7JR, K7OXB and ZL3OX was hrd. on 160 mx.

Bill Jehn, L4001, sends in a very good list, logged 80 through 15 mx. VK8OW, VK8AD, VK8UX, VK6AV, VK9GP, ZL5AI ZL4JF, VR-4CB, VR1G, CE3RO, TI2HK, SP9HK, XE1FB, ZE6JA, YV4EH, VQ4HX, OA4DT, GW5EQL, HK3LX, LU9DAH, CX2XA, YS1JM, ZS6QY, ZS6AUZ, and many more good European and African prefixes. (Next month pse. indicate band and QTR OM.) All were on a.m.

Peter Drew L6021, heard. 20 s.s.b.: ZS5JM, ZE3JJ, ZS7R, VR2BJ, KX6CG, VE7ZM (all between 0500-0800; all times GMT) 40 mx a.m.: 9M2FX (0035), ZL3BL, VR2DI, W3PHL, VR1G, DU9PET, DU9FC, DU6RG 0800-1045) 40 s.s.b.: XE2WH, W4VCA/KH6, VK2VC/LH, KX6NG, K0RQO/KH6 (0800-0930), XE1CV (0930) 40 c.w. VS1FJ, JA1HGJ, W6FCL/KH6, JA1DMX, many Ws and JAs. 15 mx a.m. ZE7JR, VK8DS, 4S7BR, MP4TAC, VQ4RF, ZS6AXI, CR7CK, CR6JL, ZS3OM, W6HQI/MM, VS9MB, ZS6ARX, ZS1MW, VS9ARC, VS1GC, VS4RS, ZS2DY, ZS1JQ (Africans 0700-1000) 15 mx s.s.b.: Ws, W5YNI/KS6, KX6DC.

SUMMARY

Anticipation flavours all things and in the field of Amateur Radio the keen DXer will be looking forward to the warmer months when the bands begin to liven up. 80 through 20 will improve during the night on the S.R. to Europe. This North-West circuit may let some sigs through on 3.5 Mc. at 1800z. 7 Mc. is already open from 1600z but QSOs are hard.

Well that about wraps it up for this month chaps. Once again I ask that you be kind enough to send me any relevant DX info. My thanks to all those mentioned above for taking the trouble to help the column along. 73, de Al, VK4SS.

P.S.—Stop Press. Alan VR4CV advises that due to staff shortage he will not be leaving Honiara on Sept. 5th as planned.

☆

WORLD CALL SIGNS

"Call Book Magazine" comes in two editions, one listing American Amateurs only and the other listing all Amateurs in the world except Americans. The Federal Treasurer has for sale at £1, post paid, recent back numbers of this great directory. Only "American" copies are available at the moment, but "Foreign" copies may be on hand by the time "A.R." goes to press.

Apply to the Federal Treasurer, Bob Boase, VK3NL, 50 Cardigan Street, Carlton, Vic.

VHF

50 – 144 – 288 – 576 – 1296 Mc.

Sub Editor: BILL ROPER, VK3ARZ,
Lot 59, Orchard Street, Mount Waverley, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

NEW SOUTH WALES

At the V.h.f. Group committee meeting on 30/7/62 two members of the Group were co-opted to help out as Reg 2ZCK had resigned and also another committee member indicated that he may be leaving the State, although this is not finalised. The committee wishes to thank John 2ZAW and Terry 2ZBL for coming forward.

The Group meeting was held on 3/8/62 where the lecture was given by Barry 2ZAH on a 576 Mc. xtal locked converter. The Group meeting for Sept. will be held on the 7th, as usual on the first Friday of each month.

The day event for Sept. will be a long distance fox hunt, held on Sunday, the 9th.

I would like to be able to include v.h.f. news from areas other than Sydney as I understand v.h.f. activity is relatively high in other areas, such as S.W. Zone, but unfortunately very little news filters through regularly. If anyone has any news they think would be suitable for inclusion would they please contact me on 144.18 Mc. or write to 17 McIlvenie St., Canley Heights, N.S.W.

144 Mc.: Conditions have been reasonably good seeing it is the middle of winter and the Newcastle stations are hearing Sydneyites regularly. Unfortunately the converse does not apply, which is probably due to higher noise level, lower power and not listening in the right spot at the right time.

Concurrently with the sporadic E opening on 50 Mc. many stations are listening for break through on 144 Mc. On 14/7/62 Horrie 2HL reported hearing 3ARI (?) calling CQ at 1211 E.S.T. At 1221 E.S.T 5ZPO (?) was heard and 7ZAO heard between 1220 and 1234. It has not been verified if these stations were active on 2 mx at this stage as the last letter of the VK3 and VK5 calls was not clear. Horrie did suggest that the stations were heard on a retransmission from 56 Mc., but this angle could not be confirmed.

New stations heard this month include 2ZXB at Balgowlah, 2ZBC at Terry Hills, and 3OK from Sans Souci, who was last heard on 2 mx nine years ago but has made the plunge again.

Alec 2AAK at Kulmura and David 2ZVW at St. Ives have been using s.s.b. with vox control for their QSOs. Tony 2ZBU of Waitarah has been discovering the joys of a xtal locked converter.

50 Mc.: Openings occurred regularly each Sunday during the early part of July. One of the best openings occurred on 15th when all States except VK6 and VK9 were audible at various times during the day.

576 Mc.: No activity at the moment, but 2ZAH/P and 2HO have claimed a State record of 62.5 miles from St. Ives to Mt. Gibraltor. 73, 2ZLB.

VICTORIA

VK3 Friendly Frequency.—If you have ever tuned up to 145.8540 Mc. you might have heard some peculiar sounds. Probably you have tuned in a station operating in the f.m. net. The net operates equipment that was available some twelve months ago through the Victorian Division's disposals department. The mobile sets have an input of 24w. to a 2E26, the rx's are double converted, and both are crystal controlled. The tx has a total of 10 tubes, the rx 14. Mobile to mobile contacts are common over 15 miles and on occasions up to 50 miles. Stations active include 3DF, 3EM, 3BX, 3NR, 3OM, 3XK, 3XM, 3AVE, 3ARD, 3ZCA, 3ZCB, 3ZEL, 3ZEO, 3ZFS, 3ZLO. It is hoped that in the near future we will be able to publish details of a crystal osc.-modulator which will convert any 2 mx tx to the f.m. net frequency. So watch out for it. 73, 3OM.

QUEENSLAND

Hurrah for H bombs. July DX has never been so good. On 7th, 11th and 12th—VK3s; on 13th, VK3, 5, and 7; on 14th, VK5; on 15th, we had VK2, 3, 5, 6, 7 and ZL land; on 16th, the band was open to ZL, and on 17th and 18th the band was open to VK3 and 5. On 20th, to VK3; 22nd to VK5 and VK3, and on 16th to VK5.

Maybe it was just coincidence about the H bomb, but if we could have the opportunity to study further similar experiments it may point the way to understanding the modes of propagation at v.h.f. better.

New station on 6 mx is Ken 4ZKP, who is running 6w. into a folded dipole nailed to the wall. Rx is a 6J6 converter into a com. rx. Other new thing possessed by Ken and his XYL is a brand new baby daughter.

Reverend Doug 4ZDL now visits Brisbane every Tuesday and it is a very great pleasure to hear his voice again after a long absence. Previous to this only the Gold Coast had the benefit of Doug's presence on 6 mx. George 4ZGD is now in the wilds of Tully in North Qld. He points out that not only is there a great lack of enthusiastic and progressive Amateurs, but there are very few full licensees also.

Newcomer to this part of Brisbane is Bruce 4BZ and his family. Bruce has returned from the Toowoomba area at last. V.h.f. activity in this suburb, Mt. Gravatt, seems to be mysteriously growing. There are Amateurs, Amateurs moving in, Amateurs who are going to move in, and budding Amateurs. With such a concentrated area of t.v.i. we may eventually create a t.v. set-free zone or something.

The V.h.f. Group meeting was held on the third Friday of the month at the Social Services Institute Hall at Berwick Street, Valley. This is now the new time and place. The meeting was well attended, was organised, was noisy, in fact even some business was attended to. 73, 4ZBT.

A guard of honour was formed at the recent wedding of Christine and John 5ZZ (ex-5ZCJ). 5TN and 5BQ are holding the 2 mx yagis to form the arch. A very high percentage of the guests were V.h.f. Group members and notable amongst them were VKs 5ZK, 5KK, 5TN, 5ZDR, 5ZCQ, 5ZDQ, 5ZAH, 5ZBI, 5BQ and 5ND. Radio contact on 6 mx was maintained with the newly weds on the first leg of their honeymoon. (5BQ mobile to the bridegroom's car.)

WESTERN AUSTRALIA

July Meeting: 30 members and visitors attended. Four new members were welcomed to the Group. These were Michael 6ZCX, Ian 6ZCL, Trevor 6ZDZ, and Graham Byass who has sat for the L.A.O.C.P.

Cocos Island Beacon Work is still continuing on the gear and antenna for the installation of this beacon. Further progress will be reported next month.

V.h.f. Field Day Award: Entries received for this award following the field day were of a very high standard. It was found impossible after due consideration to separate the entries of John 6ZAG, Vic 6VK and Dennis 6AW. The prize was divided and presented to these stations.

Western Video Transmission Club, VK6WV/T. This club has been transmitting regularly on 288 and good results have been achieved in reception using a converter into a standard t.v. set on Channel 3. Numerous reports have been received on picture quality and many local Amateurs are building converters. Transmission times are: Week days, 1100-1400 hrs., 1900-2200 hrs.; week-ends, 1500-1700 hrs., 1900-2200 hrs. Test patterns and caption boards have been the main subjects, but technical transmissions are aimed at soon.

V.h.f. Group Annual Meeting: The minutes of the previous annual general meeting were read. Wally 6ZAA read his report as the retiring President. He reported on the achievements and successes of the Group during the preceding year. He thanked the Secretary and members of Council for their support, and also thanked all members of the Group for their support in running the Group and participation in the Group's activities and contests.

The election of officers followed. These were Patron, Mr. Graham; President, Wally 6ZAA, Sec.-Treas., Rod 6ZDS, Council: Don 6HK, Dennis 6AW, Kevin 6ZCB, Trustees: Ron 6FM, Syd 6SJ, Auditors: Mr Dooley, John 6ZAG, Press Correspondent, Alyn 6ZDM, Programme Directors: Max 6MM, Dennis 6AW; Contest Organiser, Lance 6LR; Keeper of the Records, Charlie 6LK, Librarian, Rolo 6BO; QSL Manager, Lance 6LR.

An award was founded for the most outstanding achievement in the field of V.h.f. Amateur Radio by a member of the V.h.f. Group. This award will be accompanied by a remuneration of £5/5/0 as an incentive for Amateurs to further the achievements and technical ability of Amateur Radio in general.

50 Mc.: The first major v.h.f. opening during winter was experienced here on 15th July. VK2, 3, 4, 5 and 7 were heard and worked. The band was open from 0900 hrs. to approx. 1400 hrs. W.A.S.T. Conditions were so good that both 6ZDW and 6ZDC reported hearing 2AXI mobile, but were unable to make contact with him. Except for the activity this break through caused, 50 Mc. has been fairly quiet. Ian 6ZCP has been heard and worked using double sideband. Peter 6ZBK has a tx working and is now working on a converter and beam.

144 Mc.: Bob 6ZDP has just completed a converter for this band and both he and Brian 6ZDE are building 10 el. yagis. Viv. 6ZCM is hoping to be on the band soon. As usual cross band operation to 50 Mc. is the major activity on this band.

288 Mc.: Major activity is building of converters to receive the Amateur t.v. transmissions by 6WV/T.

It has been seen in the past that winter time is building time, so it is this year. A number of mobile stations have appeared on 50 Mc. this month, talk of 144 Mc. mobile has been heard in a few quarters. Please remember the scribe needs reports of these and other activities to give an accurate account of v.h.f. in VK6 for these notes, so pass on any news you have. 73, 6ZDM.

PAPUA

Oh what confusion regarding frequencies available for use! We were amongst those caught and were not aware until the last few days of July that 50-52 Mc. was in fact still available for use. As a result, opportunity was taken for modification of existing equipment by both 9ZBV and 9AU and both stations were inactive during the month. At the time of writing, 9ZBV still has to replace his converter xtal socket and 9AU has to carry out a lot of wiring on a new converter for 50 Mc. Murray 9CK had not made any alterations and is active again on 6 mx, but has not heard anything other than some 49 Mc. TE signals from our friends up north.

No activity at all during the month on 144 Mc. 73, 9AU.

S W L

OHO, KL7, ZD8, ON4, LZ, FF8, VP8, XW8, 5H3, WO

Sub Editor: ROBERT YOUNG, WIA-L3076,
14 Alverna Grove, Brighton, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Here we are once again with information on activities of the s.w.l's. in Australia. Firstly, I must apologise for the absence of notes in the August issue of "A.R." The reason was that only two letters were received by me for the notes. As you can understand it is impossible to write a page of notes out of practically nothing. I wish to thank the few regular members for their support every month. So chaps, how about helping to support this page by writing of your activities or equipment, etc.?

VICTORIA

At the last general meeting of the group, 19 members were in attendance. The meeting moved very smoothly, but nothing happened of great interest. After the closing of the general meeting we were all shown how VK-3WI operates on 6 and 2 mx. We contacted a large number of Amateurs while on the air.

At the construction night on 14th Sept. Ian L3066 will supply a parts list and circuit for those who intend building a 50 Mc converter. It will be a three-tube unit with an L/C osc. and will feed into a tunable i.f. in the a.w. range. It will require a power source of 6.3v. and 100 to 250v. h.t. The finished article will also be at the meeting. Those who intend to construct this unit should bring along a list of all the glass-base valves they have, pentodes, twin triodes and triodes being most useful. We will advise you.

As a large group turned up at the visit to VK3APC it has been decided to continue the visits to places of interest for the rest of the year. The next visit, on 7th Sept., will be to GTV8 Studio at 22 Bendigo St., Richmond. The time at the studio is 8.45 p.m., or for those requiring transport, meet at Victoria Parade at 8.15 p.m. Visits for October and November will be announced when finalised.

In a note from Ian L3066, he requests information for the compiling of a list of frequencies used by such services as the Flying Doctor, Bush Fire Networks, School Broadcasts, Forest Commission, Ship-to-Shore, Fishing Boats, Lighthouses, Citizen Frequencies, Model Aircraft, Pleasure Boats, Aircraft Control, Aircraft-to-Ground, and other frequency users operating in the range from 1.6 Mc. to 30 Mc. Details required are the exact frequency, time of operation, location, call signs, type of service, and other details which would assist in reception of the signal. This information can be forwarded to him direct, the address is good in any Call Book, or to me.

Those who assist will be forwarded a free copy when it is completed. We do not want broadcasting stations as there is enough information on these signals.

Yours truly has not been listening very much on the DX bands due to being bitten by the v.h.f. bug, and has been listening on 2 mx. To date have only received DX as far as Ballarat, being VK3ZER/M at Mt. Buninyong, received here with a 6 by 9 signal. He was using a four element beam three feet above the car and was running 8 watts to a 312. He worked about a dozen Melbourne stations without any trouble.

SOUTH AUSTRALIA

It seems that the S.w.l. Group in Mount Gambier is fast turning into a V.h.f. Group. It is hoped by the end of the year that there will be three more Limited licensees in Mount Gambier, due to three members sitting for a Z call licence at the recent exam. Those who sat were John Lehmann, Trevor and Colin. All that is to be done now is to await the results.

Listening at Collin's QTH has been mainly on 6 mx and a little on 2 mx. On Sunday, 15th July, there was an extremely good opening on 6 mx to VK4, VK2 and VK7—a total of 25 different stations were logged during the opening. The converter used was a r.f. unit type 26 which is on loan until a xtal locked converter is completed. The antenna used for 6 mx is only a temporary three element yagi about 18 to 20 feet high. All stations heard during the opening were all running 5 x 8-9.

Gary VK5ZGR spent his first day on 6 mx on 15th July and worked seven VK4s and two VK2s and Dale VK5ZER, ZL2GG was heard but not contacted. Gary was then running 6w and later on the power was increased to 15w. Input to a pair of p.p. 807s. The antenna used is a four element yagi about 40 ft. high. Gary's operating frequency is approx. 50.95 Mc.

Dale VK5ZER is running roughly 15w. input to a 832A, but at the moment is having trouble with his converter, but did manage to hear a few stations during the opening. The 6 mx band came good from 1000 hours till 1800 hours and there were still stations audible when it came time to pull the big switch at 1800 hours.

Collin's three tube converter for 6 mx is progressing very well and should be in operation very soon. The converter consists of a 12AT7 osc., 6U8 mixer, and a 6KS8 i.f. amp. which will feed into the Eddystone 640 at 7 Mc.

RADIO MAIL

I wish to thank the following for their letters: Eric Trebilcock, Chas. Abernethy, Peter Drew and Ian Thomas.

QSLs received by Eric L3042 so far include HC1IE, OX3UD, TG9AL, UB5ES, UD6KAB, UH8KAA, VE3KE (3.5 Mc.), VK9RR, W9WNV (3.5 Mc.), ZC4PB and ZL3BAH. It may interest you to know chaps that Eric has mailed out 666 reports this year which is not bad going.

Chas. L3211 reports that s.w.l'ing has been out for a while, although he did log Oscar 2 on 145 Mc. on six occasions, and has sent logs away to California and hopes to receive confirmation in due course. Chas. has had his son home from VK3 so the Ham station has been working hence no s.w.l'ing.

Peter L6021 has recently acquired a new rx. which is mainly being used for overseas broadcasting stations. It covers 550 kc. to 9.5 Mc. in four bands and then has another six bandspread coverages on the 31, 25, 19, 16, 13 and 11 mx broadcast bands. This of course is very good for the use stated above with good results, however it also covers 160, 80, 40 and 15 mx Amateur bands which is a great advantage, especially 15 mx which Peter has not been able to receive before. This band comes in on the 13 mx band coverage. The rx is a nine-tube superhet, put out by Pye.

Band conditions in VK6 have been poor, but 15 mx has been fairly good for W, JA, VS, ZS, ZE and CR7 in the afternoons. 20 mx has been fair for VE and W in the afternoons, while 40 mx is good for Ws on c.w. in the morning and good in the late afternoon and early evening for Ws on s.s.b., also JA and even DU, KX6, KH6, VR1G and one rare one —XE1CV .7 Mc. s.s.b.). On 80 mx, ZLs have only been heard, even the locals have been fading in and out on 40 and 80 mx.

Ian L3085 is still finding time to listen in and has sent out 123 QSLs since March and has received so far 14 in return. The latest were VK2UC/LH, CN2BK, KL7IR and ZL3OX for 160 mx c.w. report. Ian has not logged too many countries or DX stations in the past month due to being busy at his studies, however he managed to get the 6 mx converter in action again after blowing all the dust out of it and logged a few weak locals on the band. It seems a 6 mx quad will have to be erected and also may get to work on the 6 mx tx again, during the meantime it is hoped to see a rise in the DX total during the next few months.

So 73, and best of DX, Robert L3076.

DX LADDER FOR SEPTEMBER

	Countries Conf	Countries Hrd.	Zns. Conf.	Zns. Hrd.	S.s.b Conf.	S.s.b Hrd.	W Stat.
E. Trebilcock	277	282	40	—	—	—	50
D. Grantley	161	249	27	14	90	34	
A. Wescott	84	159	21	33	92	—	
M. Hilliard	69	210	33	9	106	10	
M. Cox	48	215	28	12	128	16	
C. Abernethy	43	88	26	—	—	13	
N. Harrison	34	61	24	—	—	25	
P. Drew	33	180	19	7	93	4	
P. Fields	26	133	—	—	—	—	
I. Thomas	19	134	17	7	88	10	
D. Jenkins	10	141	7	—	—	—	
H. Burger	8	135	5	1	19	—	

SIDEBAND

Phasing, Xtal Filters, Balanced Mod., Linear Amps., Vox

Sub Editor: BUD POUNSETT, VK2AQJ,
6 Alice Street, Queanbeyan, N.S.W.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

A NEW BALANCED MODULATOR

Arie Bles, ex-PA0FM, supplied the circuit and information on this balanced modulator. Arie now lives at Springwood and hopes very soon to be back on the Amateur bands with a VK2 call sign. A friend of Arie's, Mac van Schagen, PA0LZ, developed this circuit to overcome the difficulties in obtaining and maintaining balanced circuits associated with most balanced modulators. It was published in CQPA magazine and is used extensively in Holland. Fig. 1 shows the circuit of this unique balanced modulator having unbalanced input and output circuits. Impossible? This is how it works.

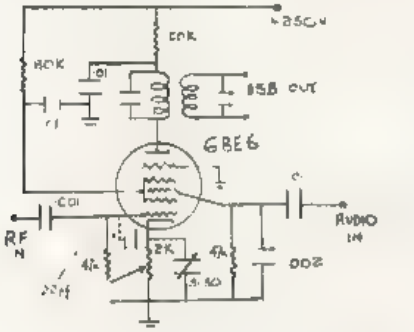


Fig. 1.—A New Balanced Modulator.

Any tube with three grids will work, but a type 6SA7 or 6BE6 pentagrid converter will perform best. A carrier signal of one volt maximum is applied to grid No. 1. As the cathode resistor is not by-passed, a large portion of the signal will appear across this resistor, approximately 0.9 volt. This produces a plate current of Sg1 x (1.0 — 0.9) mA., Sg1 being the mutual conductance of grid No. 1 and 1.0 — 0.9 or 0.1 mA. being the signal voltage between grid No. 1 and cathode.

Grids 2 and 3 are grounded for r.f. With 0.9 volt of r.f. on the cathode, the effect of grids 2 and 3 on the plate current would be as though this voltage was applied to these grids. In other words, in relation to grids 2 and 3, the tube is operating in grounded grid. The result is that another r.f. plate current will flow amounting to — (Sg2 plus Sg3) x 0.9 mA. Sg2 and Sg3 are the mutual conductances of grids 2 and 3.

If these two r.f. plate currents can be balanced, they will cancel and no r.f. plate current will flow, resulting in no r.f. plate voltage. The carrier will be suppressed in the plate circuit. The carrier suppression can be adjusted with the cathode potentiometer. This adjustment has greater effect on the grid No. 1 to ground voltage than the grids 2 and 3 to ground voltage, making the balancing control easy to use. To make the balance perfect, phase-correction is required. A small trimmer capacitor across the cathode resistor is used to accomplish this. If, however, complete carrier suppression cannot be attained with the trimmer capacitor and less capacitance than the minimum is required, a small capacitor will need to be connected between grid No. 1 and cathode. Audio modulation is applied to grid No. 3, unbalancing the circuit at audio frequencies, so producing two sidebands in the output.

Using a 6BE6 tube and applying 0.5 volt of r.f. and audio, a peak d.s.b. voltage of 6 volts can easily be obtained in the plate circuit. Some manipulation of screen and plate voltage may be necessary. Keep the screen voltage fairly low. With the large cathode resistor and large grid No. 1 bias voltage, d.c. plate current can be expected to be less than 0.5 mA. Typical circuit values are given in Fig. 1.

Many thanks go to Arie for this very interesting circuit which will probably become known as the PA0 balanced modulator and should prove to be very popular

R.S.G.B. AMATEUR RADIO HANDBOOK

Chapter 10 of the current R.S.G.B. Handbook is entitled Single Sideband and in forty-one pages, very well illustrated, provides the reader with an excellent short course on s.s.b. transmitting and receiving techniques. The text is easily read and understood so that those Amateurs with a sketchy knowledge of sideband will find this a good place to begin their search for knowledge of this subject. The reader is taken through a step by step discussion on the fundamentals from how to suppress the carrier and produce a sideband to linear amplifiers and how to test them. At all times the emphasis is on the practical application of these principles and no great knowledge of mathematics is required

Examples are given of actual designs of both filter and phasing exciters, while the "Third Method" is described in theory only. Linear amplifiers are adequately treated both in theory and practice, there being several designs to suit the Australian Amateur, from the man who wants a modest final to those who want the limit.

If you are a keen sidebander, new or old, here is a worthwhile manual to add to your library

S.S.B. NOISE LIMITER

Effective noise limiters for single sideband reception are few and far between. The one marketed by Collins Radio, while doing a good job, has a high price tag hanging from it.

Ron Harrison, VK3AHJ, has come up with the noise limiter shown in Fig. 2. Ron uses this limiter in his 20 mx mobile s.s.b. receiver and finds it very effective. It works best at low levels so should follow immediately after the detector, and before the volume control. The threshold clipping level is adjusted by the 10K potentiometer.

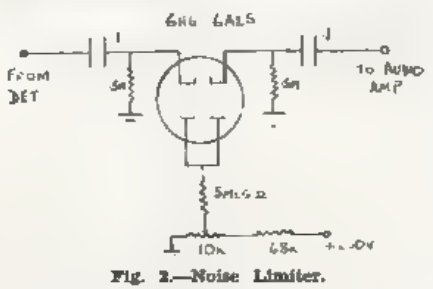


Fig. 2.—Noise Limiter.

SOME DEFINITIONS

The last two issues of the "Mullard Outlook," Australian Edition, Vol. 5, Nos. 1 and 2, have contained an interesting discussion on the fundamentals of s.s.b. Those of you who have not yet become familiar with some of the terms used frequently by sideband operators will find the list of definitions of assistance. Here, for those more seasoned s.s.b. operators, some of the commonly used terms are defined. Give these a little thought, it could lead to better operating practices.

Automatic Load Control: A means of maintaining a signal level adjusted so that the power amplifier works near its maximum power capability without being overloaded on signal peaks.

Break-In: The ability to break-in on a transmission during pauses in the sending station's transmission

Linear Amplifier: An amplifier whose output is always proportional to its input.

Load Comparator: A circuit technique used to indicate correct loading

Modulation Envelope: Envelope of modulated signal. When recovered by rectification, it is the modulation of an a.m. signal. In s.s.b., the rectified envelope does not represent the modulating signal—the carrier must first be re-inserted. Envelope of s.s.b. signal is of prime importance in determining the limits of linearity and power of an amplifier.

Product Detector: A type of demodulator, in operation somewhat analogous to the mixer in a superheterodyne receiver. Usually preferred for single sideband reception detection since it minimises intermodulation distortion products in the audio output signal and usually requires a low amplitude local oscillator signal.

Shape Factor: The ratio of the bandwidth of a filter at 60 db. to its bandwidth at 6 db.

The definitions used in this item were taken from the March-April "Mullard Outlook," Australian Edition, and our thanks go to the Editor of that publication.

FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

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(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

NEW CALL SIGNS (MAY)

VK— **Australian Capital Territory**

1PF—St. Columbias Fellowship Association, Fawkner St., Braddon

New South Wales

2BM—J. Birdsall, 22 Calbina Rd., Northbridge.

2DG—D. R. Shaw, O.T.C., Bringelly.

2TD—C. Jackson, 22 Innes Rd., Manly Vale.

2AVY—W. K. Rogers, 145 New Ballina Cutting Lismore.

2ZDF—F. L. Bochtmann, 36 Coane St., Merewether.

Victoria

3ZAP—A. J. F. Paterson, Lot 27, Victor Cres., Forest Hill.

Queensland

4DT—A. T. G. Hanson, Station: Chester St., Thursday Island; Postal: C/o. O.T.C. Radio Station, Box 3, P.O., Thursday Island.

4IR—Wireless Institute of Australia (Qld. Div.), Central Qld. Branch, Station: Official Residence, National Broadcasting Station 4RK, Gracemere; Postal: F. M. Nolan, National Broadcasting Station, 4RK, Gracemere.

4JJ—Mrs. M. J. McGrath, Elliott St., Elliott Heads, Bundaberg.

4ZR—K. J. Dibble, 84 Imperial Ave., Morningside, Brisbane.

4ZAS—F. A. D. Smith, 373 Bilsen Rd., Geebung.

South Australia

5RG—R. S. Gurr, 9 Richmond Ave., Colonel Light Gardens.

5ZGT—J. R. Tilbrook, 10 Corunna Ave., Colonel Light Gardens.

5ZJH—J. A. Hackworth, 34 Oaklands Rd., Somerton Park.

5ZLV—H. A. White, Willalooka, Postal: C/o. J. P. Thomas, Private Mail Bag 28, Willalooka.

5ZMT—T. J. Mell, Fenden Rd., Salisbury.

Western Australia

6RL—R. E. Leigh, 53 French St., Joondanna Heights.

6ZDY—K. L. Robinson, 8 Goldsmith Rd., Claremont.

Tasmania

7RF—D. E. Briggs, 22 Cottesloe St., Lindisfarne.

Territory of Papua and New Guinea

8JM—J. P. Meehan, P.O. Box 82, Port Moresby, Papua.

8AT—E. J. Roberts, Station: Lot 31, Section 41, New Boroka, Port Moresby; Postal: P.O. Box 816, Port Moresby.

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FEDERAL QSL BUREAU

Denis Andrews, G3MXJ, radio officer on the Orion, who proposed to change to a land-based job, has now decided to continue on the Orion for a further period.

The new address for the Radio Club of Chile is P.O. Box 13630, Santiago, Chile. The QSL Manager is CE3VU.

Radio Amateurs throughout the world are invited to take part in the first R.S.G.B. 7 Mc. DX Contest to be held on October 27/28 and November 3/4, 1962. Contest hours are 0800z to 2400z in each case, the first period being for phone and the latter period for c.w. Full details of the Contest will appear in a later issue of "A.R."

Due to difficulties associated with the clearance of Box 2611W, G.P.O., Melbourne, since the retirement from employment of the Federal QSL Manager, it has been decided to open a new address for the Federal QSL Bureau. This address should be used forthwith for all QSL Bureau business only.

The new address is —

W.I.A. FEDERAL QSL BUREAU,
P.O. BOX 41, BOX HILL, E.11,
VICTORIA, AUSTRALIA.

Divisional QSL Managers should now destroy all adhesive labels bearing the old address. New labels will be printed and distributed in due course.

—Ray Jones, VK3RJ, Manager

NEW SOUTH WALES

GENERAL MEETING

The July meeting, which was held in the Wireless Institute Centre at Crows Nest, was the largest roll up of people seen for quite a considerable time. The lecturer for the evening was Keith Jeffcoat, VK2BK, and his lecture was on receivers for s.s.b. His demonstration of rx's using xtal lattice filters, etc., was excellently shown, and a 144 Mc. s.s.b. tx at the back of the hall enabled everybody to hear the effect of changing the bandwidth of the i.f. strip.

After the lecture was finished, a discussion about our property at Dural, where the Divisional Station VK2WI is situated, took place. Many people spoke both for the retention of the property and against the retention of it, and the final outcome was that there was to be a series of tests carried out by the Communications Committee in order to see if the Wireless Institute Centre was as good a site for propagation as the present site at Dural.

At the outcome of the meeting, the President, Vol Molesworth, VK2VO, tendered his resignation, and handed the chair over to the Vice-President, Max Pieffer, VK2MP.

GENERAL NOTES

Tim 2ZTM, owing to the pressure of work, etc., has been forced to seek leave of absence from Council for three months, and to resign from the position of Communications Officer. He has, however, remained as chairman of W.I.N.A.P. (Wireless Institute News and Publications) and his place as Communications Officer has been filled by Sid 2SG.

The Public Relations Committee is going ahead like wildfire in the renovation of the front portion of the Centre. Plans are in hand to have the walls plastered, patched and painted by the time our Spring Ball comes off on 1st Sept. This should be a really excellent show, and we hope to see a good roll up.

W.I.N.A.P. is going ahead like a house on fire and so far have produced a Handbook of Hints and Tips, circuits of 144 Mc. transistorised transceiver, transistorised converters, valve converters for 144 Mc. and similar things. These are available to all members of the Institute for the price of a s.s.a.e. and an enquiry to W.I.N.A.P.—Tony, L2210.

HUNTER BRANCH

The July meeting was held, as usual, in the University College and there was a good attendance of 22, including four visitors. Sid 2SG was on hand to give his most informative illustrated lecture on transistor converters for the Amateur bands. The lecture was very well received if the questions asked at the end are any indication. Sid dispelled from the mind of the oft-told bogeys of transistors and even our worthy Vice-President was convinced that they should, as he said, "be in every home." To be able to see the actual gear described in the lecture and to personally talk about problems with the lecturer is a great encouragement and I am now confident that my own converter so long dormant because of self oscillation, will be in action for Blackalls.

Ian 2AJF has abandoned all thoughts of building his own tx and is now the owner of an AT21 which, up to the time of writing, u creds only in making the screen at his home a complete blank when switched on. We welcome back to our circle of local natterers Jack 2KQ. By the time these notes appear, Jack will be away "in the warm country," to use his own words, where he will stay for six weeks. Chalk pushers are the traditional long vacation characters. My note about Harry 2AFA being persuaded to go on the air apparently worked, for, hardly was the ink dry than he was heard calling Bill 2ZL. If this is the power of the press, then surely the pen is mightier than the sword. Harry is even making mild mutterings about two metres.

It is reported that Stuart, our worthy President, is about to join the rank of our duck-talking colleagues and will be active on all bands before long. This is in addition to his two metre activity where all is reported to be going very well. Another 144 man, Tony 2ZCT, was tempted to have a go at the farmyard cackles with a circuit which appeared in a U.S. magazine. He is, however, unable to find any information on a tube type 6AR8 which is used in colour t.v. In the land of April Weather. Anybody with gen on this tube, see Tony.

Norm 2ZNF has had the phone to the shack disconnected because he is tired of hearing the much repeated phrase, "Are you on the air?" Norm has a wonderful beam which does quite remarkable things even though it bears no resemblance to the drawings in the text-books. Stan 2AYL has been heard at my QTH on two and is, according to remarks, having some trouble putting bits of piston back in place in the Jaguar. It is quite likely that yours truly may be on 3 soon because of a generous offer by Mac 2ZMO. More of this later. 2QB is soon to be heard on the band. Fred 2AEE is reported to be still active although I have not heard him. Ron 2ASJ has recently, thanks to the help of the boys, gone on 2 mx. It is good to know that Ron is well enough to be very frequently on the air of late. It is said that Bob 2AQR may be preparing a surprise for us all at the field day, is this true?

Activity among the associates is growing rapidly and several of our members are known to be contemplating an early try at the big quiz. Belmont Bob had to steer some local youths on the right track recently concerning the use of the v.h.f. portion of the 10 set. Bill Munn is looking for crystals for 2 mx so it looks as if he will be on this band while getting ready for the Morse.

Elsewhere in this issue there is the advertisement for the Dinner and Field Day. Study this and the Bulletin carefully and come along for a good day's fun by the shores of the lake. Yes, I'll be there and you will be able to personally challenge me for wrongful reporting if this ever could truthfully be said.

Also you are reminded of the next meeting which is to be held at the usual venue, University College, Tighes Hill, on Friday, 14th Sept., at 8 p.m. The lecture as far as I know at this time is Keith 2BK's s.s.b. rx's which was postponed from an earlier meeting. Bill 2XT will be holding his usual social gathering at a rival hostelry this month I imagine as the Dinner is only three days later than the usual fourth Wednesday, but come along to the monthly meeting and ask for details of all the goings on. Don't forget Blackalls, we'll all be there. 73, 2AKX.

BOORAGUL HIGH SCHOOL RADIO CLUB

A small party recently travelled to Dural to visit 2WI. Those fortunate in the selection were Susan, Ray and Allen who, with past member Bruce, accompanied Keith 2AKX on the journey. A very good day was had by all and the duty operator and engineer were most helpful in their explanation of the gear. To make the day complete Harold 2AAH arranged for some gear donated by 2TL to be passed on to the club. Our sincere thanks to these two gentlemen for the useful items so kindly donated to our club. We do appreciate gifts of components and units and you may be sure that these are being put to good use.

At least three members are trying out for the Technician in Training course with the P.M.G. We already have two past members with this Department and we wish the new applicants success. Another group of candidates is ready for the Elementary Certificate exam. and several members are completing the projects for the Junior Certificate. 73, 2ATZ.

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SILENT KEY

It is with deep regret that we record the passing of:—

VK3OO—Eric Wardle.

VICTORIA

A Special Council Meeting was held on 16th July to formulate a proposal to increase interest in Amateur Radio in general and the Institute

in particular. The considered opinion was that it was necessary to place a definite suggestion before members to discuss.

As Council saw the problem, there is something lacking in the Institute, the question being "what?" From questions asked, the most common complaint seemed to be lack of opportunity for the chaps to natter informally and meet the other bloke in a social atmosphere.

Discussing this aspect, the thought arose that monthly meetings did not meet this need. Possibly members felt that travelling to the city or the difficulty finding parking space made the effort too much.

If this were the case monthly meetings as such must be a waste of time and may as well be discontinued, and an alternative found. Reviewing all aspects, Council formulated a plan for the formation of suburban radio clubs.

AUGUST GENERAL MEETING

Despite widely publicised appeals only a little over 40 members attended the August meeting. Formal business was quickly disposed of to allow plenty of time for the agenda item for the evening.

This was to be a critical discussion of some aspects of Institute activities. The chairman asked Michael Owen to open the discussion. He explained that the basic reason for Council raising the matter was the continuing poor attendance at monthly meetings. Average attendance is between 25 and 30 from a membership of about 500. Council considered that the Institute functioned well on an administrative level, but that the social side of things could be improved, and with this object in view suggested the formation of affiliated clubs operating throughout the metropolitan area, catering for the needs of members within a relatively limited district. It was suggested that in order to qualify as an affiliated club, the club would require a minimum licensed membership of, say, 15, of which two-thirds should be members of the Institute. A member of the Institute could be a member of as many local clubs as he desired (or could afford), but for the purpose of affiliation would have to nominate only one club.

Clubs could be supported by a per capita payment in respect of each Institute member of the club, similar to present per capita payments to country zones. Each club's constitution would have to be approved by Council, but the conduct of its own affairs would be a matter entirely for the club.

To enable clubs to have representation on Council the metropolitan area would be divided into three zones, the clubs in each zone would jointly elect a member of Council. Seven councillors would then be elected as at present, by the membership as a whole.

A further suggestion was that a committee of representatives from each affiliated club be formed to co-ordinate the activities of the clubs, to advise Council in relation to the clubs and to make recommendations to Council.

If this proposal was adopted, it was suggested there was little point of continuing the formal general meetings. Possibly a city club could be formed to cater for those members who preferred to attend meetings in the city.

The administrative functions could be left entirely to the Council. It was emphasised that Council would be subject to the Annual General Meeting, and to Special General Meetings. It was suggested that the status of the State Convention should be changed so that the Council became subject to a decision of the State Convention which could be attended by delegates from country zones and affiliated clubs.

It was stressed that the whole object of the plan was to encourage membership of the Institute by linking the clubs as closely as possible with the Institute, by representation on Council, by participation in State Conventions and by some financial contribution from the Institute to the clubs, although leaving it to the clubs to conduct their own affairs.

The matter was then opened to the meeting for discussion, and many of those present spoke on it. Most opposed the abolition of general meetings, but, as was pointed out, most of those present were regular attenders of general meetings anyway. Alf 3LC, speaking on behalf of the Moorabbin & District Radio Club, said that his club was in general behind the idea, although on some points he felt his club was anxious to retain its independence.

The general feeling of the members present was to support the formation of clubs, which, as Len 3LN said, had operated very successfully in the past. A few members indicated they strongly opposed any change, as they felt that the formation of suburban clubs, with lower membership subscription, would attract members away from the Institute, thereby weakening the Institute. However, no precise alternative proposals were formulated.

A number of suggestions were made to improve general meetings, including the use of lapel badges to identify those present, the appointment of hosts to introduce new members, and generally conducting the meetings in a less formal manner.

All members are urged to consider these proposals and to make their views known to the Council.

The following new members were admitted to the Institute: Bernard Coles, VK3JS; David Smith, VK3ZKS; Mikolaj Suboez, VK3AVV; John Winton, VK3XR Angus Harding VK-3ZKZ Ralph Birrell, VK3ZNE, Robert Terrill, VK3ZFT, as full members, and the following as associate members Arthur Hall, Douglas McKenzie and Arnold Marks.

Having devoted so much space to the matter of the last general meeting, I cannot carry out my threat to fill the mag. with personal notes this month, so I'll close by observing that a certain make of vehicle bought after checking a certain budget is a waste on anybody who never drives over 25 m.p.h.

EASTERN ZONE

Jack 3AJK, of Moe, hopes to be on the h.f. bands again by the time you read this, after over five years absence. He is busily getting together his equipment, including a Lafayette rx and a tower. Cliff 3ATT has been working some 40 mx evening DX, including KX6, VR2, as this band is getting better. 4ZBP is now residing in Bairnsdale and may get on 144 Mc. in the near future. Alan 3AON has been operating portable on 144 Mc. from Mt. Tassie, working the local boys.

About a week after the Pacific high altitude atomic test, Peter 3ZDP and George 3ZCG experienced some good sporadic "E" contacts on 50 Mc. Also two weeks later, David 3DY had an excellent QSO with JA4OI, of Okayama, for nearly an hour on 28 Mc., one of the best QSOs they had for the year. He has a weekly sked each Sunday at 2 p.m. local time. Most times they make contact, so the old 10 mx band is not as bad as it seems.—3ZCG.

MIDLAND ZONE

Activities in the zone have been mainly on 80 and 2 mx. Jim 3SV active on both bands and is the backbone of the present zone activities. Col 3FO is active on 80 and 2 mx also, together with 3APJ, 3AHA, 3ZIK, 3ZLJ and 3JW.

Conditions on 40 mx have not been very stable. VK5 and VK2 being the only areas heard with any consistency. I am not yet transmitting on 80 mx, but listen there regularly. By the time these notes are in print I will be in VK4 land on vacation, departing from the land of rain and snow on 31st Aug. and returning on 1st October.

We will also have held our general meeting of the Midland Zone at the residence of Peter 3APJ, on 17/9/62. Notes from this meeting will appear in the next issue.

What about some news from zone members on general activities? If you are unable to contact me directly, Jim 3SV will hand the info. on to me. 73, 3ND.

WESTERN ZONE

We have decided to hold our Annual Convention on Sunday, 28th October, and the location will be Murtoa. This spot is rather central as far as the zone is concerned, but perhaps a little far for the metropolitan chaps. However, distance will not be much of a problem for one of our members who expects to attend per light aircraft, working mobile on the way. Will give more details in next month's "A.R." and W.I.A. broadcasts.

A couple of our members have been active on the new 160 mx band with very encouraging results. This band may prove very handy in the near future. Chas. 3IB is on the air from his new QTH, however as yet his antenna system is very limited so is not very active. We offer congratulations to Chas and Audrey on the arrival of another son.—3AKW.

GEELONG AMATEUR RADIO CLUB

The Geelong Amateur Radio Club held its annual meeting on 27th June at the studios of the local b.c. station 3GL. Club President, Jack 3ALP, chaired the meeting. Jack presented to members the annual report, and commented on the fact that during the past year the club had encountered numerous setbacks, not the least being the loss of the club rooms. However, a newly acquired tx room/workshop helped compensate for this loss. The club station, 3ATL, along with a number of members' stations, took part in the National Field Day with 3ATL/P at the You-Yangs, also the Jamboree of the Air with portable operation from various Scout Halls. The club badge was another achievement this year.

The following office-bearers were elected for the ensuing 12 months: President, Alf 3AJF; Vice-Pres., Jack 3ALP and Jim 3ABT, Secretary, Dick 3ABK; Treasurer, Harry 3ASI, Assistant, Vic Clark; Publicity Officer, Daryl 3ZNC, Assistant, Jim 3ABT, Auditor, Geoff Woods, Committee, Fred 3ALG, Peter 3APK, Bob 3IC, and Frank Rocca; Librarian and Equipment Officer, Eric 3XL.

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QUEENSLAND

Business officially this month starts with the July Council meeting, held on 19th. The meeting was told of letters sent to all the non-member licensees in Queensland, giving reasons why they should be members of the Institute and of the quick response to them with letters of application. Advice was presented that the P.M.G. Department had advised that Peter 4PJ had been chosen to fill the vacancy on the Advisory Committee. Peter resigned from the sub-committee handling the constitution review.

The Council was told the following had so far been given S.w.l. Numbers beginning with L4001: W. Jehn, K. King, D. Ness, J. Ness, J. S. Luck, R. Campbell, L. Lane, L. Haagsma, N. Fenton, G. Franks, G. Millner, and C. Charles. Al 4LT was nominated as the new Federal Councillor and as there were no further nominations, he was elected. It was moved that the motion on the use of the 28 to 29.7 Mc. band adopted at the June general meeting be forwarded to the authorities.

MONTHLY MEETING

The regular monthly meeting held on 27th July attracted the good proportional attendance of about 40. The meeting adopted the following for membership as recommended by Council: R. C. Harris, 4ZRJ; Oakleigh Boy Scouts, 4OS, D. J. H. Gemmell, 4ZEK; G. B. H. Gray, 4JP, R. Lyon, 4ZFL, J. C. Baird, 4ZBB; D. N. McGrath, 4ZDM; and associates A. Beimers, V. G. Wright, W. Daigliesh, D. W. L. Condle, C. C. McDonough, D. Marcus, and Y. L. Yarrow.

The meeting was told there was always a need for technical articles in Amateur publications. Pat 4KB said it was inevitable that there were fewer articles about old subjects for they had been covered before. However, he suggested someone might have a new approach. Major articles should go to "A.R." and the minor ones to "QTC". Mention was also made of a discussion on a technical subject on the 4WI hook-up each Sunday. What do you think?

Main business of the night was a discussion of the operation of the Hallicrafters SX115 rx. A model was flown to Brisbane for the meeting and thanks go to associate Gil for arranging this and also to Vince 4VJ for the discussion.

AUGUST COUNCIL

The August Council meeting was held in the Institute of Engineers' rooms on 10th August. At this, the names of 21 new applicants and old members re-joining were received and recommended for acceptance by the general meeting. They are 4MB, 4FM, 4XT, 4MP, 4WW, 4ZRS, 4BM, 4AQ, 4LM, 4UT, 4RJ, 4ND, 4BY, 4WM, 4OC, 4DA, 4ZAB, 4GP, 4ZAR and associates M. Bennett and J. J. Burow.

That's quite a response from the penned request, but do your bit by urging along those who have not quite made up their minds to join. The Council received a letter from Bill 4WX tendering his resignation from Council because of his own and his wife's ill health, and it was accepted with regret. The Council asked Stewart 4LA, who is actively associated with Council, to fill the vacancy caused by the resignation.

The Council decided to submit the following names to Federal Executive as nominations for the Federal Contest Committee: Col 4CI, Ron 4RL, Harry 4ZB, Graham 4LW, and Lionel 4NS. These people will become ex-officio members of the executive and operate as a body responsible only to the executive. Thanks for nominating, chaps.

No doubt that by this you will have read of the September Intrastate Contest, but in case you haven't, here are some facts. The Contest will be held on the third week-end in the month from 1200 to 1800 on the Saturday, and from 0930 to 1200 on the Sunday. All bands may be used and there will be a point for each VK4 Amateur contact on any band. There will also be an s.w.l. section.

GENERAL

There are at the time of writing 19 in the S.w.l. Group in VK4 and the first visit and Ipswich meeting have been arranged. Things look promising for this section when there are more involved. Perhaps the R.D. Contest, which will have been held, might do something to add to the interest.

During July, the Northern Command Signals Amateur Radio Club presented 12 persons for the A.O.C.P. exam. so there should be some

new call signs on the bands before too long. The club's annual meeting elected Ian 4ZCI, President for the next year; Jim Green, Secretary; Tony 4ZTC, Treasurer; and Brian 4UW and Alex McNaughton as members. The President's report for 1961-2 makes interesting reading for what a small club can do. 73, Don.

SOUTH COAST ZONE

No improvement in conditions here has been noticed, in fact they are reaching an all time low as regards contacts with others in our State. By arrangement with Jack 4JF, Inward QSL Officer, cards for this area will be forwarded to me for distribution. This shall be done personally when and where possible. Those expecting cards should they be in town will be welcome to call on me and pick their cards up.

Frank 2ACQ and Ethel passed through recently on their way home after a grand trip in the Sunshine State, which they thoroughly enjoyed. They were followed the next day by Bob 2IN and Daphne in the homeward trek. Both families should now be safely ensconced in their own homes. However Frank's itchy feet will have him packing up on his way to Gundagai for the Convention to be held there at the end of September. 73, 4WS.

TOWNSVILLE AND DISTRICT

News from Ayr and District is as follows: Frank 4CW will have been on for the R.D. Contest using a brand new home-brew tx.

A t.v.i. committee has been formed to help when the northern station starts in late Sept., all being well. This committee, with plenty of publicity in the local press, will help to foster the goodwill of the Amateur and see that he is not held responsible for all the interference that may occur.

They also hope to hold a Convention in Sept. or Oct. and have started allotting jobs to members. The social side will be looked after by 4OJ and 4ZFA, and fox hunts, etc., will be organised by 4ZBG, 4UX and associate Harold Csiloski.

Claude hopes that all the six students will face the barrier first exam. in the New Year. Good luck to you all.

Just heard that Bert 4LB has been in hospital for the past fortnight, and if I didn't hear otherwise would have come up and sat on the bed and consoled you. Glad to report the operation was a success and Bert is home again looking forward to the R.D. Contest. Believe that John 4DD had a trip to Thursday Is. on inspection, while his co-worker, Eddie 4WH, attended a refresher course in Sydney. They don't have those trips in my job, hi! Believe Les 4XJ is on the way north to partake of our wonderful winter climate and is bringing along his mobile gear.

It seems that the Rocky boys will grab all the sigs passing and let no r.f. past them. Share a little with us up here, please.

No information if the local club is forming a t.v.i. committee. A lot of spare time will be required to help out, or are we hoping that our area will be saturated and hence no problems? Hope so, but still will get the odd complaint that it is the Amateur if the picture fails. 73, 4RW.

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division, the Division with not too much sun or rain, in fact just right, was held to a very representative gathering of members and visitors. The guest speaker was Mr. A. Smyth (5MF), who gave an interesting and informative talk on various types of s.s.b. tx's and associated gear. Al. made a somewhat unusual approach to his talk, inasmuch as he had already prepared a number of block diagrams on paper of commercial s.s.b. set-ups, and discussed at length the merits and de-merits of each, displaying a wealth of knowledge of his subject, which clearly indicated the time and preparation he must have devoted to the talk. Judging by the quietness of the audience during the talk, together with the number of intelligent questions asked at its conclusion, that the entire gathering thoroughly enjoyed themselves, which was amply demonstrated by the applause which followed the vote of thanks to the speaker, so ably proposed by Harry 5MY. Al. also brought along for demonstration purposes his own constructed s.s.b. table-top set-up, which, if I might say so, was a joy to behold, and further proved, if proof was necessary, that he sure had a thorough grasp of his subject. A good night's entertainment, Al. Many thanks.

Now at this point appreciative reference should be made to the fact that the XYL of Brian 5CA, Marlene, acted as minute secretary at the meeting and, I am informed by my spy planted in Council, is also acting as minute secretary to that august body. Marlene does a terrific amount of work for the Division, mainly in assisting Brian with the publishing of the Divisional Journal, etc., etc., and I personally have nothing but admiration for her efforts.

Roy 5DA was sighted this month passing through Renmark on his way to the temptations and frustrations of VK3. Don't know how long he intends staying over there, but if he takes my advice he will take care when he crosses any of their bridges! (Sticks and stones may break our bones, etc., but cracks are forbidden.—Ed.)

Comps 5EF was another to visit Renmark and during the lunch hour, when Tom 5TL was having a little snoop around the bands, opened up full blast with his mobile s.s.b. rig with a consequent bulging at the sides of Tom's rx. Whenever a duck goes quack-quack these days, Tom goes white and shivers from head to foot. How could you, Comps?

Fred 5MA has been heard on 3.5 Mc. at times, and from his conversation it would appear that he is thinking along the lines of the power supply described in this magazine recently. It will certainly save having to charge a battery if he can get away with it, as the writer of the article assures he did. Erg 5KU is not very active on the air these days. Claude 5CH is heard occasionally on 7 Mc., usually with a signal that bends the S meter. Leo 5GJ is still under the influence of the "Goggle Box," and has not been to a local group meeting for some time. Dale 5ZER, who really does not come under my searching glance because of the Z call, but then I will do anything to fill this column, now has his 6 mx tx going great guns, plus a 5 element beam and is now working on the converter.

Col 5CJ is to be heard regularly on the well known "lunch time" session, but his main activity is in the direction of preparing the tower for the next v.h.f. season. Col, whatever did happen to that budgie? You know, the one that the cat was minding for you?

John 5KX and Ken 5KC have been chosen to attend the next Radiological Reconnaissance Course to be held at Mount Macedon in connection with W.I.C.E.N. Of course by the time this is being read it will be all over, but as I have said before, I never miss a chance to fill this column.

I don't know whether to write a "Letter" to the Elizabeth Amateur Radio Club, or not. Some two months ago I made an application to them for their worked all Elizabeth award, and after all the coarse and suggestive remarks regarding its legality had died down, they promised to consider the application. Now in view of their "Letter" to the VK5 Council on its supposed dilatory attitude and slowness in getting things done, I don't know just what to do. Perhaps I could wait another six months or so, and see what happens, or am I being just a little impatient? Life gets tedious, does it not?

Clive 5PE has taken the much sought after job of 5WI to his bosom, and going on reports, plus what I have heard of the session, is doing an f.b. job. As you can well imagine he was nearly killed in the rush to take on the job and several applicants for the job are still licking their wounds. Excuse my mirth, but all jokes aside, he is to be complimented for offering to do the broadcasting and the associated chores, and it now remains up to all the Divisional members to keep him flooded with news and information for the betterment of the session. No matter how good he is, nor how hard he works, without a number of shoulders to the wheel he must find the going too hard. Incidentally, a chap I know was saying just how the session should be handled to several at the meeting, and when I suggested that possibly he might like to write to Clive each week with information or perhaps some newsy paragraphs, he looked at me as if I had just escaped from the nut factory, and said, "I am too busy for that." He apparently was not too busy to run the session in his imagination.

Whilst I am still in such an amiable mood, may I sincerely be permitted to congratulate VK6 on the re-appearance of their notes in the mag., and also to say that I like the style being adopted. May I also be permitted to say to my palsy-walsy 6LS, that he must expect only criticism of his efforts, no matter how good, but always remember he will receive his reward in heaven. Perhaps!

Talking of VK6, I notice with some envy that their 200th member was the Rev. Brother McKenna (6AQ). Now unless I am suffering from a memory lapse he is a one-time VK3 who called in to see me some years ago when the Best and Foremost Broadcasting Station in VK (My, how it's climbed.—Ed.) was situated on top of the C.M.L. in King William St. We had a long chat about Amateur Radio and sundry subjects at the time, and despite the fact that he was a VK3, I was very pleased to make his acquaintance. If I am right, then VK6's gain is our loss, although how he came to go to VK6 after having to pass through VK3 will always amaze me. Salutations, Brother, do you still read my notes?

So the VK3 notes squeezed out 5PS recently did they? Har, har, that's what you think. I was scuttled, that's what I was. I had it all nicely and neatly tied up when I left for my holidays, but someone undid the pretty blue ribbons, and everything went up the spout. If my palsy-walsy, the Editor, would graciously print it, I would tell you just what I said in certain quarters when I returned. He will!! Well here goes. I said, "What are all you droogoes doing btschet ctieowyt wouridsu cirpoaue woupelsurn, do you want to get like the banana-eaters?!!!!!

Heard George 5GG on 7 Mc. the other Sunday in contact with Charlie 3ACR and George was quoting a well known fact that if one leaves 7 Mc. for very long, one soon loses contact with a long list of friends made on this band. George was declaring his intention of working more on this band of many friendly contacts. I also heard Vic 5JH telling George 5GG, later on, that he (Vic.) had just finished a contact with his one-time foreman, Charlie 5ON, and from what he said, this Charlie bloke must have been a somewhat rare type of foreman. Vic said he was very sorry when he retired. Well, blow me down, sorry when the foreman retired! Did you ever? Saint Charlie they call him!

Neil 5WN heard also on 7 Mc. in QSO with Frank 5FJ, and you might be interested to know Neil, I picked your voice as soon as I heard it, long before you signed. A good and solid signal, OM.

Occasionally, when the lights are turned off, when the windows are closed and barred, and no man's footsteps disturb the silence of the night, I turn on my b.f.o. and revolve, dissolve, or what ever it is that one does to get some sense out of the quack-quack that comes out of the speaker. Always when I do this I find another of my acquaintances who has left the well known straight and narrow. This time it was Ron 5GM who was nobly calling CQ DX on the high end of 7 Mc., and seemed to be in exceedingly high spirits. Oh dear, oh dear, soon I will be the lone VK5, the only one not quacking, the only one who has stood his ground, even though there are quacks to the left of me, quacks to the right of me, and not a single egg to spare!!

On page 4 of the June issue of "A.R." is an article under the heading of "A Like-New Mixer Circuit," which, if I might be permitted to say, is a "Wow!" I scrapped my 6AC7 mixer and replaced it with the one recommended in the article and it lived up to the claims of the writer, and then some. Dave 5DS and Joe 5RC commented highly about it at a recent meeting, and I then thought they were laying it on a bit thick. However, from my personal experience, I now know that they were, if anything, playing it down, and I can thoroughly vouch for it. Why it even worked first time, which if I might say so, seldom happens to me. I congratulate the "Mag" on its choice of articles.

Believe it or not, the issue of "A.R." for August was without any reference, oblique or otherwise, to my humble self from any of the Divisions that have been sniping at me for some time. Admittedly there was a dubious reference to my ability to work DX, from none other than my buddy (the Greeks have another word for it), Ye Editor, and a slighting reference to my youth from VK4, but aside from this, all was quiet. This disturbs me. Am I losing my ability to "Needle," am I losing my small section of readers, or did my recent reference to VK4 and their inability to grow a straight banana cause a split in that direction? Oh there I go again, banana split, get it? Banana split, get it? Oh well, I thought it was funny, how was I to know they would be thin-skinned. Oh-oh-oh, get it? Banana skin, banana skin!! Will someone please stop me. At this rate I will be going s.s.b. any day. What am I saying? 73, de 5PS—PanSy to you. No not you, Reg 3MZ, sit down. (All comments direct to 5PS—please. The Common Pub., sorry, Pub. Comm. accept no liability.—Ed.)

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WESTERN AUSTRALIA

Well the cloak and dagger boys are really starting to work for me now. I am getting a network of spies together covering the greater part of the State of W.A. Secret messages are passed quite openly through the mails, in plain envelopes (stamps attached, of course!) telling me of the doings of fellow Amateurs throughout the land.

So to mix the metaphors a little, as we've had the heaters running for the required per-

iod, we press the "h.t. on" button, turn up the wick, and to the tune of a busy humming sound from the power supply, call Alleen 6YL. Believe Alleen had been thinking earnestly about the R.D. Contest at the time and discovered that she hadn't been on since last Christmas! Shame on you, and I hope you got the required number of contacts. Now Bill 5RX, who is Alleen's XYM—Eh! There's a new one; that means Ek's Young Man—is having beam trouble. The beam motor has locked in one position, which is tough luck, Bill. If you're my type, Bill, it will be due north and south and the only contacts available will be Polar Bears or Seals. And I guess they wouldn't play with you either.

Talking of things playing, reminds me. If anybody is passing by Bob's (6BE) new QTH and hears odd oompah sounds emerging from the lounge room, it could be either of two things, (1) Bob playing the electronic organ which is built into the lounge room, or (2) Bob working on his rig which is built into the lounge room also. As Bob and his XYL have not been married a great while, there appears to be some sort of moral here, if only I could see it. Good luck to you both in the new QTH, Bob.

This leads me to another QTH, that of Les 6WL, who is also moving shop. As Les had a lot of trouble with t.v.i. at his old QTH in Bunbury, I shouldn't be surprised if he has been dissuading would-be purchasers in his immediate vicinity not to buy those troublesome square-eyed monsters. Have heard too, that about three weeks prior to the time of writing, Les burnt his hands with molten lead. Trust that all is OK again now, Les.

From the south of Perth we go to the north and drop a signal in on 6WU. However, it will soon be a loud and clear signal on 6 mx, for with urging and some assistance from Lance 6LR, I believe a four element beam is to raise itself above Moora. This should prove to be very interesting.

And just to prove to you that my spies cover the greater part of this State, we go further north and find that Col 6CJ is going share-farming up top, and so that he won't get too lonely, is taking his portable gear with him. So be watching for the weak sigs as they roll down.

Rolling down the State again, we stop at Katanning, and who should roll in there recently but an old timer, "and that's for sure," Alan 6AB, checking up on the "X" gang in that town. For your edification, just in case you think Ham activity only started with the last I.T.U. Conference, Katanning was really active 30 years ago. Between 1935 and 1939 there were at least nine Amateur stations around the place, and such call signs as Bert 6AR, Fred 6FJ, Ivan 6IW, Clarrie 6LL, Max 6MZ, Jack 6WO, Clarrie 6XG, Harry 6ZZ, and even the Katanning Radio Club with the call 6KC, must bring back nostalgic memories to a number of other "old timers" in other parts of the State. And "that's for sure." Cyril 6CN, now of Kellerberrin, received his call while at Katanning. But with World War II. disrupting our joys, some joined the Services, others were transferred to other jobs, and some just plain drifted away. Heck! What's gone wrong! Keep the flag flying chaps, don't shoot them a signal till you see the white on your S meter.

Great excitement recently amongst the v.h.f. boys, when a break through was predicted for 19th July—and arrived on schedule. At the time of writing, another is predicted for 18th August. You'll know by now whether that one was as successful as the July break through when Eastern States boys were worked with great gusto.

By the time you read this, too, the 1962 R.D. Contest will be another memory, but we trust that, at the going down of the sun and in the Contest, you will have remembered them. 73, 6LS.

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TASMANIA

Late in July we farewelled Brian 7ZBE. Brian has been selected to join the next Antarctic expedition to leave Australia shortly after next Christmas. His job will be weather and radio. Brian will be operating, probably from Davis Base, both on h.f. and v.h.f. we hope. So keep an ear turned for him from some time in January 1963 and for the ensuing year.

Bob 7OM could not participate in the R.D. Contest this year as he was away in Brisbane at the time, on holidays.

The explosion of the high level thermonuclear bomb in mid Pacific early in July produced some very worthwhile experimental work of an investigatory kind. Len 7LE monitored and taped transmissions from WWV on both 5 and 10 Mc., as well as the control station at Johnson Island. The resulting edited tape gives a clear representation of what happened to signals. The accompanying graphic representation derived from pen recordings made from the WWV transmissions served to demonstrate the point all the more. We were indeed fortunate to have a short address and playback from Len at the August Divisional meeting. The active Amateur has also had an excellent opportunity to make observations on conditions before and after this explosion, and it is my hope that an effort will be made by our Institute to collate these observations to form the foundations for findings of some scientific merit.

The two heaters bought by the Division during July have materially improved conditions in the club rooms. Taken with the chairs recently purchased, the rooms are now much more attractive and comfortable for meetings.

The A.O.C.P. class under Terry 7CT is now functioning weekly, and hard work is under way on the part of the students. Council is most grateful to various members for donating Handbooks to the Institute for loan to students attending this course.

At the August meeting of the Division an auction of donated gear was conducted on behalf of the club room fund and the sum of £19/15/- was cleared to add to the fund. Also, please keep in mind the function in aid of the same fund to be held in the C.W.A. rooms in Criterion St., Hobart, between 8 p.m. and midnight on Sat., 29th Sept., 1962. The charge for admission is £1 per head, which includes the cost of supper and all refreshments. Bring along your friends as paying guests, after all, all the more the merrier. But please let the committee have your subscription or undertaking to attend well before the function, to ensure proper and adequate arrangements.

80 mx has become very popular during the day time. It is quite usual now to find half a dozen or more stations on 3590 kc. How about you coming up on that frequency too? The same band has also been most reliable for call backs after the Sunday morning broadcasts. Excellent signals have been heard here in Hobart from stations on the North-West coast, as well as the Northern Zone. 160 mx, to the best of my knowledge, has now three VK7 stations capable of operating on it, namely 7LZ, 7RY and 7CH. I know there are at least two other stations contemplating gear for that band. One final reminder. Send in your R.D. Contest log, for sure. It will help our Division. Remember the final date for posting is 17th Sept. 73, 7ZZ.

NORTHERN ZONE

It just had to happen—attendance reached a new high of 20 at the July meeting and as from Sept. it has been decided to move into a special meeting room. Fortunately suitable accommodation has been found over Geoff Lutwyche's radio store at 73 George St., Launceston, and as far as I can gather the entrance fee for August will be one chair—no chair, no seat. It's as simple as that. If this progress keeps up our worthy officers will have to start organising a "Bob-a-Job" campaign so that we can purchase the Town Hall.

Activity in the zone is still rather restricted from the "on-the-air" angle, however this will definitely improve as the younger members become licensed—as many undoubtedly will in the very near future. 7BQ and 7DK are still keeping skeds on 144 Mc. and 7BQ is also completing a tx for 1.8 Mc. 7LZ is active on 1.8 Mc. and has managed to work a few VKs and ZLs with a rather inefficient aerial system. 7EC is now starting to receive QSLs from his first DX. Ted is quite active on 7 and 14 Mc. c.w. of an evening. 7CA is busy with t.v. but manages to be around of a Sunday morning for the Tasmanian hook-up.

Activity on the v.h.f. bands is still very low, however on Sunday, 15th July, 50 Mc. opened up to VK2, 4, 5 and 6 and 7BQ made a few contacts.

Will all members please note that the Sept. meeting will be held at the address given earlier in these notes on Friday, 14th Sept. Keep this date clear and if possible bring a friend.

NORTH WEST ZONE

7XL has been playing with vox and from tests it really works. 7MS is still modernising his outfit and will soon be the envy of the local b.c. station. A stony silence still emanates from Ulverstone, so no comment. 7SM, as always, is the most consistent Burnie station on, and I heard him work a VK6 on 80 mx the other night.

The annual meeting was held on 7th August, and the following office-bearers were elected: President, Ken 7AI; Vice-Presidents, Ken 7KH and George 7XL; Secretary, David 7MS; Treasurer, Max 7MX; QSL Officer, 7XL; V.h.f. Officer and Zone Correspondent, Harry Young. We congratulate the in-coming office-bearers and look forward to a successful year.

We were delighted to see Terry in person once again, looking a little older, maybe. So I now bow out and await Harry's notes next month. 73, 7MX.

HAMADS

Minimum 5/-, for thirty words. Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received at P.O. Box 36, East Melbourne, C.3, Vic., by 8th of the month, and remittance should accompany the advertisement. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

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SELL: Hammarlund S-100 Super Pro Rcvr., Johnson Viking 150w. a.m.-c.w. v.f.o. Xmtr., BC221, Multiband Dipole, Fones, Turner Mike. £200 total or separate. VK3ASV, Hank Rowland, 22 Canberra Rd., Melbourne, S.E.2; Phone 63-0221 or BJ 1043. Yank owner must go home and needs to sell this complete American station prior mid Sept.

SELL: "Lynmar" Balun, 1 kw., 50 ohms in (coax.), 72 ohms out (bal.), B. & W. on mtg., 72 coax. in, 300 or 72 bal. out. VK3JK, Ph. Mornington 3183 (Vic.).

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U50/15	5-58	8-50	13.75	10.4	15 or 20	30*	6.5	2.75
U80/15	7-89	16-80	13.75	10.4	15 or 20	40*	6.5	3.50
U200/8	5.5-206	20-206	17	15	8	20†	5.75	2.40
U200/10	5.5-206	20-206	17	15	10 or 15	40†	9.06	3.50
U240/15	10-240	25-240	34	31	15	50*	8.0	4.06
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